VOLTA REVIEW

Vol. XIV FEBRUARY, 1913 No. 10

The Hard-of-Hearing Child in the Public School

Important Articles by

Dr. G. Hudson-Makuen

and

Dr. Max A. Goldstein

Showing the Otologist's Point of View

Day-School Work Pictorially Presented

The VOLTA BUREAU
WASHINGTON D. C.

Volta Bureau: Business Office of the American Association to Promote the Teaching of Speech to the Deaf, 35th Street and Volta Place, Washington, D. C.

CONTENTS

Frontispiece

School-Room Ethics in Speech Teaching. By Eleanor C. Lacoste 651

The Open-Air Movement in Education in England. By A. Jackson 654

The Wall. An Allegory by Edward B. Nickle 658

The Voices of the Deaf 659

The Early Home Treatment of the Deaf Child. By C. Hudson Mahon 660

The Disposal of the Deaf After the School Age. By Alice A. Crudden 663

Mr. Dooley on Lip-Reading. By Lou May Bean 666

Wisconsin's Day Schools for the Deaf. Series of Photographs 668

The Hard-of-Hearing Child in the Public School. By Ella V. Lapham 672

Beginning Arithmetic. By Jessie L. Cobb 679

A Legend for the Spring-Time. By Enfield Jones 681

Progress of Speech Teaching in American Schools for the Deaf. By Hans Tauber 684

Work at the King School, Marsuvan, Turkey. By Miss Grace Philadelphia 688

Phonetically Written Stories in the Melville Bell Symbols. The Necklace of Truth 689

Photographs of Human Affairs 692

Pointers for Parents of Little Deaf Children 698

NOTICE

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We always have the power of spiritual growth. Not deafness nor any other ill can cut us off from this great opportunity.

EDWARD B. NITCHIE

VOLTA REVIEW, January, 1913.

Be the sympathetic, tactful, and kind friend of the father and mother of every one of your pupils. These characteristics will go far toward promoting the welfare of our work of education.

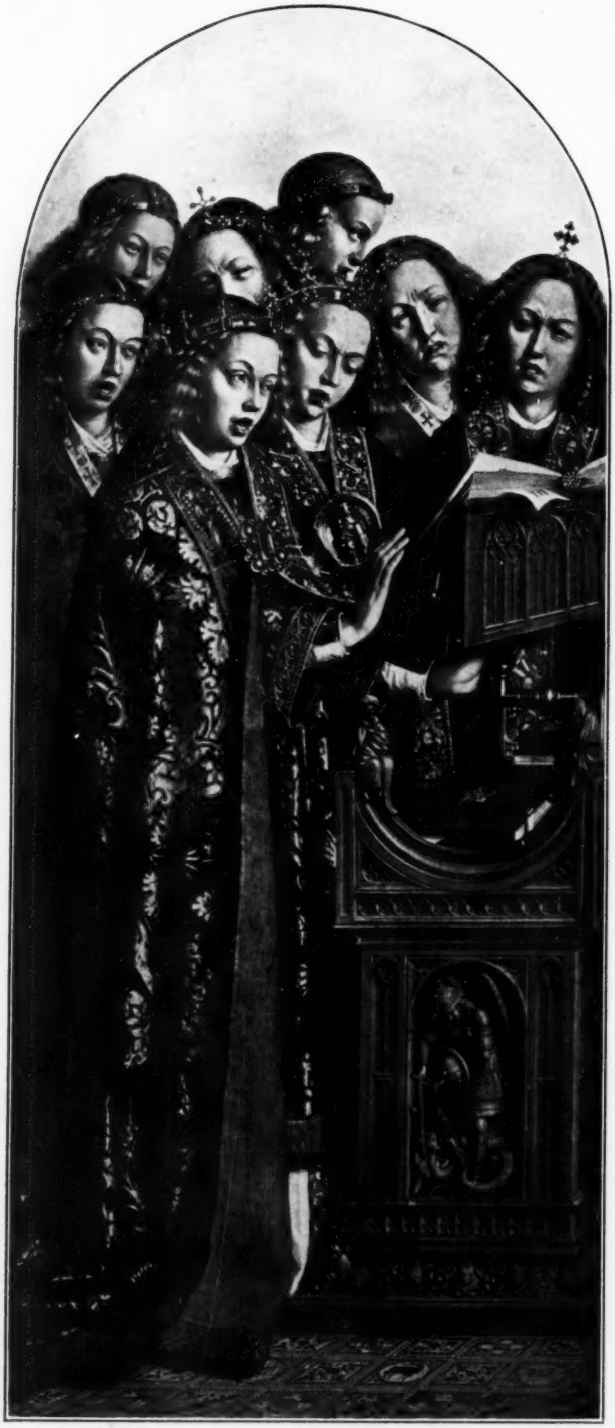
KATHARINE F. REED

VOLTA REVIEW, January, 1913.

The Volta Bureau should be conducted along scientific rather than pedagogic lines; while it should impartially present the views and theories of others, it should hold none, advocate none, endorse none. Its true function is to collect and correlate and disseminate facts, letting the recipients analyze and assimilate those most helpful to the cause they serve.

FRED DE LAND

VOLTA REVIEW, January, 1913.



A STUDY IN LIP-READING

"Die singenden Engel," Hubert and Jan van Eyck

THE VOLTA REVIEW

Published by the American Association to Promote the Teaching of Speech to the Deaf, Volta Bureau, 35th Street and Volta Place, Washington, D. C.

Volume 14 FEBRUARY, 1913 Number 10

SCHOOL-ROOM ETHICS IN SPEECH TEACHING

BY ELEANOR C. LEONARD

WE ALL know what "speech teaching" means and what technical knowledge of the organs of speech and of the formation and development of elements it demands. But with the most accurate knowledge of phonetics, a quick ear and eye, and a flexible tongue under excellent control at our command, there are still other things to think about when we undertake to teach a little deaf child to talk. We can learn the mechanics of speech by study; we can train our ear and master our own unruly tongue, and when all our tools are ready we must remember that their proper and successful use depends largely on the atmosphere of our school-room. It is only by keeping certain broad truths and far ends in mind that we can have, to keep and rely upon, the abiding inspiration that promises joy to the children and insures them against the daily school-room monotony, which kills all pleasure and banishes all hope of success.

Speech teaching in our schools means teaching a little deaf child to use his tongue and lips as we use ours; to produce sounds as nearly as possible like those we make when we converse with one another. The vast multitude that never heard of teaching speech exclaim, "Why, it must be impossible to teach them to really talk!" It isn't impossible; it *is* difficult. But we must never forget that however hard our task may be the one that confronts the little deaf child is infinitely harder. Try to imagine yourself suddenly projected into the interior of China, unable to hear a sound, and unconscious that sounds exist. Suppose that all knowledge of language, all memory that objects have names is erased from your mind, and picture yourself required to rivet your attention upon some one whom you have never seen before, and to make to some unknown end strange and aimless movements of your mouth. You would have in that unthinkable situation nothing more strange and mysterious than a little deaf child finds to daze and bewilder him when he first goes to school. Of course, he doesn't know what he is there for nor what it is all about, but equally, of course, since he is a child, he is ready to find contentment in the varied activities and interests presented for his pleasure and development. Obedience to laws whose application is in our minds, not his; activity along lines which lead he knows not whither; repeated endeavor toward ends whose value he cannot estimate; these make his day and his problem. Not that it seems a problem to him; it is his problem, but it is for us to solve it, and is it not incumbent upon us, his teachers, to offer him the best we have to help him in a difficult situation, and never to lose sight of his viewpoint in the stress of our own endeavors.

And, having given our best, it is incumbent upon us also, for his sake as well as our own, not to be discouraged. Of course, he cannot learn to talk quite as his hearing brother talks. Such speech is the ideal which we hold before us, but is as yet unattained. It is as hard for his teacher to have to acknowledge this as it is for his mother to learn it, but we must not listen in our school-rooms for the babbling and chatter that we hear in our neighbor's nursery. We must, neverthe-

less, be unceasingly thankful for speech that is intelligible. Sometimes a small pupil will possess a clear sweet tone, a truly "childlike" voice, a gift of the gods, bestowed without regard to mental ability, and in no way due to any effort on his part or ours. But for the most part we, his teachers and his mother, must be immeasurably grateful that he can express himself in speech which the outside world can understand. Harshness may be prevented, nasality avoided or remedied, the pitch of his voice regulated, and fluency to differing degrees attained, but we must not listen for the lilt and sweetness of a hearing child's prattle. We must remember that a first slow attempt at "May I have some milk?" is infinitely better than a gesture to indicate the milking of a cow or a systematic twiddling of little fingers, which only a very limited few would understand.

In this matter of speech, then, the more stupendous task is not ours, but belongs to the little deaf child before us, and the results of our labors and his, however unfavorably they may compare with the chatter of a child who hears, are, nevertheless, immeasurably great in that we have opened a way out to a little active mind in bondage, a mind that had strayed alone in a world of utter silence, into which we could not penetrate, and whose needs and longings and tragedies could find expression only in unpleasing gesture, screams, and fits of temper. Our task is great, his greater, and the reward greatest of all.

With these thoughts well in mind and a row of little strangers before us, we are ready for the next inevitable question of the uninitiated, "How do you *ever* begin?" There are ten little wrigglers who have never sat in a row before, who have never sat anywhere except as fleeting fancy dictated, who show a marked distaste for sitting at all, a growing desire to investigate, if not molest, each his neighbor or to wander off in search of a familiar face. We seize a bright feather, blow it, and make a rapid tour of the class, holding it before each small mouth. And each little tongue may be curled into a different sort of incorrect bunch, but each mouth puckers and blows in quick imitation, making all unconsciously the sound of *wh,* and ten little souls are started on the long road to self-expression by means of intelligible speech.

No task is grateful unless its successful accomplishment is a desired end. The task of learning to talk is not one of inspiration to a little deaf child who does not know that he wants to talk. And if the task is stripped of pleasure-exciting devices it is in great peril of becoming drudgery. Power of speech as an end is far beyond a small deaf child's conception, and so a goal must be placed before him, whose significance he will understand and which he will want to reach.

The ultimate aim of the process cannot inspire him with a desire to wiggle his tongue or sit before a mirror and investigate the interior of his mouth. He does not really care whether his tongue is up or down, nor is the position of the little thing that hangs down at the back of his mouth, so hard to find and so mysterious in its movements, of any importance whatever in his world of interest. Because the far end of this extraordinary process is beyond his ken, the road to speech must bristle with ends which *do* appeal to him and the attainment of which looms large as the most desirable thing in the world. Otherwise he will be restless, mischievous, and troublesome, with every reason for being all three. This we must prevent by means of every pleasure-giving device known to man and by many not known to anybody, but invented on the spot to meet emergencies. We must diligently search our minds for inventive faculty to create these little aims and interests along the way.

There are certain absolutely dependable qualities in the mental make-up of every child upon which we can rely. He likes to imitate; he likes to excel; praise is the very breath of life to him; he has

a considerable supply of unquestioning confidence, and finds an absorbing interest in little things. He really enjoys doing what nine other children are doing; rapid action along any line is not unpleasing, and change always has the effect of a strong tonic.

He has, as we see, in undeveloped form, the same characteristics that actuate us grown-ups: love of success and triumph and craving for approval. We, too, find zest in competition, joy in excelling, peace in accomplishment, and pleasure in variety.

To take the place of moral obligation and the long look ahead that sustain us, he must be given an appreciation of the good things that come to him who tries, and he must be taught the habit of unquestioning obedience. Obedience is the foundation on which all our building is done; without it we cannot build at all. It should be required of every child at home or at school. And it is not difficult to teach a child obedience. If he knows that we mean what we say, absolutely, he will obey. But if our "No" sometimes changes to "Yes;" if the "No" can be disregarded without resulting discomfiture; if we sometimes forget that we said "No" (a child never forgets) he will take the chance every time and we shall have a disobedient child.

And so we find that there is much in the little lad himself to help us in helping him if there is that in us to bring it out.

First of all, he must know that he possesses something which he can neither see nor touch—a stream of breath—and he must become very proud of that intangible, invisible possession. He does not know how to control it, nor any reason why he should control it. He does not recognize it as the great tool with which he is to work, the perfect use of which will enable him to take his place among his fellow-men. His interest in his stream of breath is not in what it stands for in the power of speech, but what it can do *now*. When he sees a bright feather sail off across the room because he blew it; when a candle-flame vanishes at the end of his stream of breath, or when a celluloid ball rises into the air and stays there, balanced on the end of that same stream of breath—the power that does such things is going to be of value in his eyes. A row of *p's* and *wh's* on the slate may not excite his interest, but warm praise because he does his best to pronounce them, or sorrow because he doesn't try; his initials on the slate for all the world to see and admire; the proud privilege of brushing off a *p* well said; one tiny round candy for a noble effort to conquer a whole row of *p's* and *wh's* will make those cold and formal symbols of speech look like symbols of pure child-pleasure. And pleasure is doubly as efficacious as pain. It is true that a near and desired end does not shine bright through a veil of sullenness or disobedience. Sunny and ready obedience and confidence have not always been developed at home. Sometimes a small boy has to be lifted, first of all, to this high plane of trust and obedience. But in this matter of learning to talk, of mastering the complex machinery of spoken language, which is in itself a great mystery to him, punishment sometimes creates and augments an element of bewilderment which praise and pleasure eliminate.

It is as impossible to enumerate the countless ways of creating eager interest as it is to estimate their miraculous effect, but it is for us to know them, every one. It is a child's absolute right, as well as his best good fortune, to be active and happy, and it devolves upon us, in whose hands his welfare rests for so many of his waking hours, to make sure that that good fortune is his.

A very sensible teacher writes: "I have found the deaf, with whom I have come in contact, eager and hungry for ethical and spiritual knowledge; but the 'heart to heart' or the 'eye to eye' communion is not always easily entered into by the teacher or the deaf themselves—children or adults—unless true sympathy and confidence exist between the questioner and the would-be guide. Hence the spiritual and the altruistic natures of our deaf are too often neglected, famished, and although intellectual heights have been attained, life is dull and often one-sided to the deaf not yet one with their fellows."

THE OPEN-AIR MOVEMENT IN EDUCATION IN ENGLAND

BY A. J. STORY, STOKE-ON-TRENT, ENGLAND

FOR some time past the efficacy of fresh air as a curative medicine has been insisted upon in the cases of those suffering from certain forms of actual disease, but recently its preventive value has become even more widely acknowledged. "Prevention is," proverbially, "better than cure," and therefore, though somewhat late in the day, it is recognized that the best period in the life of the individual in which to commence this regular association with open-air life, in order to foster a permanent love for it, is in childhood. Hence in many places instruction is now given during the summer to school children in playgrounds and in fields instead of in the stuffy atmospheres of comparatively crowded and often ill-ventilated class-rooms. It is, therefore, the duty of the teacher to preach by word and example the gospel of fresh air.

The chief medical officer to the English Board of Education in his report for 1910 wrote: "Open-air training represents in a simple and direct way the preventive side of education for children suffering from more or less temporary ailments. The advantages secured are various. The teacher and child learn from practical experience the benefits to be derived from outdoor life. The child becomes physically strengthened and mentally responsive, shows a keener aptitude to learn, and is happier for the joyous contact with nature and for the freedom to move, to play, to search, and to record. He has ample opportunity of learning to abhor stuffy rooms, whether in the home or school, and there can be little doubt that as the new movement extends it may become a powerful influence in encouraging the people to work out their own salvation in regard to some of the problems of domestic sanitation. . . . To the school medical officer open-air education is a means of direct preventive medicine. The anæmic child improves in regard to the hæmoglobin content of the blood; the emaciated child increases in weight; enlarged glands diminish or disappear; lung troubles improve or even vanish. . . . In this way open-air education tends to restore the enfeebled body to a normal condition of nutrition and energy, helps to dispel many of the nervous conditions incidental to child life in towns, and serves as a most valuable adjunct in the prevention of constitutional disease, including tuberculosis."

Open-air schools have in England come to stay. London has this year established three. Bradford, Halifax, and Sheffield have their own schools of this nature and have erected suitable shelters for use in bad weather. Liverpool has provided for the education of its physically defective children in this way at Roby. Birmingham, through the generosity of Mr. and Mrs. Barrow Cadbury, possesses open-air accommodation for a hundred of its delicate children, who travel thereto each day from the city for varying periods as necessary.

But generally the open-air schools already established are designed as curative agencies for children who are known to be weak or delicate. They are not as a rule used for preventive purposes in the cases of children apparently healthy and able to attend the ordinary schools.

Some six or seven years since, Mr. F. G. Barnes, the headmaster of the Homerton School for the Deaf, London, introduced the departure into the education of the deaf in England of removing the whole of his pupils to Osea Island, on the Essex coast, for a period of several weeks, during which the whole of the instruction was given out-of-doors and life in general was spent *al fresco*. It has, of course, been a frequent arrangement for classes to be taught in the playgrounds and fields during suitable weather in the hot months of the year in almost every school in England. Two years ago Mr. J. O. White, the head-

OPEN-AIR SCHOOL, MARGATE INSTITUTION FOR THE DEAF

master of the Margate Institution, made provision by the erection of light structures, as shown in our illustration, for the greater part of the school work to be taken in the open air, and this year the plan has been repeated with, we believe, extensions.

In the spring of the present year, at the Stoke-on-Trent School, which stands in park-like grounds of some eleven acres, seven outdoor class-rooms were erected. Previously open-air education had been the rule during the summer on all suitable occasions, when classes were taught under trees, which, notwithstanding that the school is situated within a mile of the center of the much-misunderstood and maligned potteries district, flourish amazingly. But trees as a protection from rain and wind have their limitations, and consequently the continuity of open-air teaching was frequently interrupted by inclement weather and refuge had to be sought inside the class-rooms of the main building.

The class-rooms erected this year meet the well-known vagaries of the English climate exceedingly well and permit of continuous instruction in the open air. Each one is constructed of durable materials, and all have been erected by the boys under the supervision and guidance of their instructor. Three of the seven accommodate fifteen pupils each and are used by the blind children. The remaining three provide places for ten children in each and are set aside for the junior deaf. The varying capacities of the two types of class-rooms, used respectively by the blind and the deaf, are decided by the limitations as to seating accommodation required by the Board of Education.

The design of the class-rooms is necessarily a simple one. Generally speaking, in such erections, the simpler they are the better. It is said that several authorities are held back from initiating the open-air movement in their own schools because of the expense. But no great expenditure is necessary in order to provide an efficient means of benefiting children in this way. At Stoke-on-Trent, the constructions costing nothing for labor, being built by the boys, accommodation was arranged for 85 children for an expenditure of about 80 pounds ($400), an average of less than a pound ($5) for each school place. It is quite probable that the experience of open-air class-rooms will lead to the gen-

eral modification of permanent school erections, and this will result in financial advantage as well as the more important physical betterment of the children concerned.

The sizes of the open-air class-rooms at Stoke-on-Trent vary according to the ages of the children taught in them, but generally the following description of one used for the small deaf children applies to them all. The general design is a square of about 12 feet. The roof is supported by stout uprights, sloping from a height of 10 feet in front to about 7 feet 6 inches at the back, which is entirely boarded in to protect the children from northeasterly winds. The front, therefore, faces the southwest, this being found to be the most favorable on this hilly site. The sides are boarded to a height of 3½ feet, except for an opening on one side, which serves for ingress and egress. This opening is protected by a door of the same height as the boarded sides and is shut when necessary. These partly boarded sides are of much value, as they afford protection from winds and draughts about the feet and legs when the children are either sitting or standing. The open spaces between the three partly boarded sides and the roof are fitted with sliding blinds of a stout material, which can be instantly closed at any point to shut out high winds, glaring sunlight, or driving rain. These blinds are also useful for effectually closing the structures when not in use, thus preventing them from becoming damp and unsuitable for use the next day. The floors at the present time are ashed and frequently damped to prevent dust; but it is intended to replace these by wooden ones raised from the ground in order to allow of the passage of a current of air beneath them. Permanent desk accommodation of a useful, but perhaps not ornamental, description is provided in each class-room, thus preventing the necessity for carrying the desks from the main school. These desks, which also were made by the boys, vary in size to suit the different grades of children. Outdoor tables for observation work, manual work, or any suitable use are arranged in close contiguity to the class-rooms and under fine trees. From the sizes of the class-rooms it may be thought that they are rather small for their purpose, but this has proved not so. There is ample room for a stand-up lesson in the bay formed by the desks, which are arranged around three sides. Then, too, as the structures are open to the winds of heaven on three sides, the usual consideration of air space applying to indoor rooms is absent. Each class-room has its permanent blackboard, and is adorned with the usual pictures and maps by the teachers practising in them.

This year, because the equipment could not be completed earlier, the outdoor school opened on May 1, and, with the exception of the holidays, has been continued up to the time of writing, the end of October. But had the buildings been ready a start could have been made early in April. At first it was arranged that when the temperature, as recorded in the school ground, fell below 50 degrees the children should come inside the main building. Experience has shown during the summer, which owing to the peculiar nature of its weather has imposed a fair test of the question, that the children work very comfortably at 46 degrees. Here and there a child may complain of cold feet, but a scamper round the grounds overcomes that annoyance. Others may, through some trivial lowering of the general health, feel chilly at times, but an extra garment restores comfort. It has been found that while those accommodated in inside class-rooms have suffered the usual penalty of the English autumn—colds—those taught continuously outside have entirely escaped. It is also noticed that the children much prefer to be taught outside, and if there be any delay in going thereto when school assembles eager petitions are made to go into the open air. The teachers invariably report improved health in themselves. They say they do not feel the strain of the day's work so heavily, and that the children "learn bet-

ONE OF THE OPEN-AIR CLASS-ROOMS AT STOKE-ON-TRENT

ter." This year's experience has been conclusive of the value of the open-air system of education, and next year every effort will be made to complete the equipment and give the whole of the children in the schools the fullest advantage of fresh air continuously.

The children in residential institutions mainly come from crowded towns, and many of them on their admission are found to bear clear traces of their earlier environment. These are fit subjects for open-air life. Efficient feeding, suitable clothing, constant care and attention, coupled with open-air life, work wonders in these children. Two important problems of education are concurrently solved—the physical and the intellectual. But, more than this, it may be expected that each of the children so trained will become an advocate of the gospel of fresh air and assist in solving, as the chief medical officer of the Board of Education points out, many of the problems of domestic sanitation, for it must be conceded that a considerable number of our social difficulties in our towns have their origin in the absence of pure air and clean water in the homes.

HELPING THE HARD-OF-HEARING

In most large communities there is at least one member who is more or less hard-of-hearing. We can make life more pleasant for our colleagues so afflicted by doing two simple things: first, articulate distinctly, and second, speak in an even pitch and tone of voice. Every partly deaf person will tell you that there are speakers whom he can hear with practically no difficulty, while others, even although they shout, fail to make themselves intelligently audible. There is a reason, of course. And, couched in untechnical language, the reason is this. As the eye has to focus on an object, so the ear has to focus on a sound. When the organ of hearing is defective, this focussing process is attended with special difficulties, chiefly lack of speed in adaptability and considerable limitation of range. Numerous sound vibrations fail to find a response in the defective ear, and accordingly are lost; others irritate and confuse.—*C. S. Journal.*

THE WALL

AN ALLEGORY BY EDWARD B. NITCHIE

THREE wayfarers traveling along a Road suddenly found themselves on a side path. When they tried to rejoin their fellows on the broad highway they were forced to climb a steep embankment, which was so high and slippery that try as they might they could not scale it. But the path paralleled the main Road and seemed not altogether unpleasant, so they continued to follow it, hoping it would join the Road again farther on.

The path led through solitudes where no human voice was heard and through great silences, where even the rush of the wind in the treetops and the roar of the waterfalls were mute. Beauty was about them everywhere, but the music of nature was stilled, and the terror of the silence numbed their senses in the perception of the harmonies of sunlight, moonlight, starlight on woods and fields, lakes and rivers, valleys and mountains, and all the glorious earth that surrounded them. In fright they hurried on, blind to everything but the path before them, dreading in anticipation what it might lead them to.

So they went on, until one black day just at nightfall they came to a Wall stretching across the path. It was of stone, and in the dusk seemed very high and extending far on either side.

In the morning they tried to scale the Wall without success. Tall trees hung over it, and these they climbed, but the Wall rose higher as they climbed and their task was hopeless. They tried to seek the end of the Wall and circuit it; but on one side they were met by the steep and slippery embankment leading to the Road, which they had already vainly endeavored to scale, and on the other side they faced an impenetrable tangle of forest growth which blocked their passage. In despair one of the wayfarers tried to retrace his steps along the path, and was so amazed and so disheartened to find the path had vanished and the jungle growth taken its place that he made no further efforts to seek release, but remained brooding and pining till death came.

One day a magician came to the two remaining wayfarers and said: "I will find for you a way through this Wall. Pay me well and you shall see." And on his word they paid him, and he gave them a vial filled, he said, with a costly oil. "Pour it in a crevice in the Wall tonight and in the morning the Wall will have disappeared."

But in the morning the Wall was still there.

And again came another magician and said: "I can blow up your Wall for you and let you through. Pay me well and you shall see." So they paid him, for hope was still in their hearts. The magician inserted the explosive and touched the fuse and there was a great explosion.

But when the smoke cleared away the Wall was still there.

And another magician came and said: "I am the master of electricity. I can send a current through your Wall and it will crumble away like clay to the hammer. Pay me well and you shall see." Him, too, they paid, though hope was dimming. The magician set his batteries against the Wall and turned on the current.

But though for days the current was allowed to flow, in the end the Wall was still there.

And yet again came another magician and said: "I am the master of vibration. I can make the Wall vibrate until it totters and falls. Pay me well and you shall see." Reluctantly they paid him, for hope was almost dead. The magician set his machine against the Wall, and the thunder of its vibration was heard by those on the Road.

But the Wall did not totter; at the end it was still there.

And, finally, came another magician and said: "I alone can release you. Believe me and have faith and your Wall will vanish. Pay me well and you shall

see." But they answered him: "How will this miracle be?" And he said: "I have here an aëroplane; come with me and we will fly over the Wall as though it were not there." And one of the wayfarers refused; but the other was persuaded.

The aëroplane rose in air, but even as it mounted the Wall rose too, and ever was the Wall higher than the aëroplane, till at last the wayfarer below, looking upward, saw the body of his comrade falling to destruction.

For weeks the remaining wayfarer plumbed the depths of despair and prayed that he, too, might die. Magicians came no more, but one day a fairy came to visit him. With her brightness and beauty she cheered him, and then whispered into his ear.

"No!" he cried.

"Yes," she said. "The Wall is real; it can neither be surmounted nor broken down. But you can change its ugliness into a bower of beauty if you will do as I have said."

And he did. And before very long the Wall was covered with a beautiful ivy that waved in the wind, and gardens of rare and wonderful flowers bloomed at its base, and the man hummed and sang gladsome songs as he worked the livelong day.

Gradually other wayfarers came along the path, which was still open for those coming, but never for return. For a few, a very few, a door opened in the Wall and they passed through; but the great majority could not follow. Some of them did as the first wayfarer and some as the second and they perished. But many joined with the third in making the Wall the foundation of a paradise of marvelous beauty.

And the travelers on the broad highway, looking down from afar, sighed and said: "Ah, if we, too, only had a Wall, how beautiful our lives would be!"

The ivy covered the wall, but in the vision it was given me to see in ugly spreading letters, hidden by the leaves, one hideous word—DEAFNESS.

THE VOICES OF THE DEAF

WHY is it that in course of time the voices of deaf persons acquire a character that is easily recognizable? This question is answered in *The Albion Magazine* in the course of some interesting observations by Dr. Norman Porritt on the vocalization of people who are hard-of-hearing. The following quotation is from an abstract made by *The British Medical Journal:*

"As a deaf person is, above all things, sensitive and afraid to draw attention either to himself or his failing, he gets into the habit of modulating his voice, and unconsciously adopts a too subdued tone in speaking. This is a danger against which many deaf persons are not sufficiently alert, and if a deaf person is not watchful, he may practically lose his voice as well as his hearing. Even with the help of the best medical treatment, he may not be able to retain the latter, but he ought, at least, to be able to preserve the former. To this end he should avoid the enticing habit of speaking in his throat, and should be at pains not only to articulate clearly, but to open his mouth and enunciate his words distinctly and even emphatically. He should not be afraid of speaking out.

"As a useful exercise for the deaf in this respect, reading aloud so as to be heard distinctly in a large room by people of normal hearing is recommended. This advice is worth noting by those who have to deal with deaf people either as friends or as medical advisers; for it must be a matter of common observation that it is as difficult to understand some deaf people as it is to make them hear. The fact is that all human beings tend to attune their voices by the amount of sound in their vicinity, and in the absence of any external sound gauge the desirable pitch by the sound of their own voices. In the case of deaf people, all external vibrations produce more or less muffled sounds, while since those of their own voices reach their hearing-organs practically unimpaired, they cause a relatively great noise.

"The result is that the deaf man is handicapped in gauging the tone of his voice, and tends to think that he is speaking much more loudly than is really the case. Hence he often gives his friends and others who have to converse with him an unnecessary amount of trouble by making it difficult to hear what he has to say as well as to make him hear. Similarly the deaf man sometimes puts himself at an unnecessary disadvantage by commencing a conversation with a stranger in what is really a very low tone, and thus inducing his auditor to drop his voice likewise."—*Literary Digest.*

THE EARLY HOME TREATMENT OF THE DEAF CHILD*

BY G. HUDSON-MAKUEN, M. D., PHILADELPHIA

IN ORDER to make the so-called oral method of teaching the deaf child more widely applicable and generally useful, it will be necessary to improve somewhat upon our present methods of teaching it, and it is my purpose at this time to emphasize one of the reasons why many deaf children do not become oral successes.

As I have said on a previous occasion, the most important period in the life of the deaf child is that which comes before the school age. It is the period during which the hearing child develops a fairly good command of language preparatory to taking up the work of his school education. Under our present system, as Dr. Kerr Love has said, the deaf child arrives at the school age in the intellectual condition of the child of two, and consequently several years must be devoted to the acquirement of speech before his general education can be taken up. This is on the principle that any systematic and effective intellectual development must proceed simultaneously with the development of the vehicle for thought, or some form of language and speech.

This principle is well illustrated in the case of the normal hearing child, who not only learns to understand the speech of others and to acquire speech for himself, but he does it all during the first three or four years, and without any conscious effort on his own part. Children inherit a natural tendency toward the development of speech, which can only be thwarted in its processes by some positive and pronounced physical or psychical disability.

The period during which the understanding of speech and its natural consequence, the practical use of speech, are developed is a definite and limited one, and when it has once passed it is doubtful whether perfectly normal speech can ever be acquired. This period begins in the second year and it is practically half over at the arrival of the school age; so that manifestly, other things being equal, it must be a mistake to deprive the deaf child of all this valuable time.

The principle of non-interference with the development of the normal child has many arguments in its favor, but that it cannot be applicable in the case of abnormal children must be admitted by those who have had any experience with the deaf. The normal child, possessed of all his faculties, easily and quickly adapts himself to his environment and grows like Topsy into more or less perfect harmony with his surroundings; but when he is deprived of one or more of his senses, this harmonious development is at once checked and he becomes different from his fellows. Not only does he not improve with age, but he retrogrades, especially in respect to his emotional and psychical condition.

The deaf child, for instance, is usually a spoiled child, and when left to his own devices during the period immediately preceding the school age, he becomes mentally and physically incapacitated for the reception of any kind of instruction until after a more or less protracted course of training has been carried out.

The deaf baby is generally misunderstood and therefore neglected. The hearing baby, on the other hand, immediately becomes the pride of the household and receives too much attention. In this way they are both spoiled. Neglect of the deaf child, however, is a specially serious matter, because it tends immediately to check his natural and inherited tendencies to acquire language and speech. Even the congenitally deaf child inherits, through a long line of hearing ancestors, marked tendencies or inclinations to speak, as is shown by his babbling and

*A paper presented before the Ninth International Otological Congress at Boston on August 12-17, 1912.

prattling. These early phonatory and articulatory manifestations are the beginnings of speech and they should be encouraged to the greatest possible extent, and not ignored, as is usually the case.

The normal child learns the meaning and use of words by hearing them frequently repeated and by observing their association, and it has been shown that the deaf child can do likewise, with only a little less accuracy, by seeing words frequently repeated.

That hearing is not absolutely essential to a more or less accurate understanding of speech has been fully demonstrated in the case of numerous deaf children. Strictly speaking, speech is never heard, but only the voice is heard, and this, as has been pointed out, is no essential part of speech. Animals possess the faculty of phonation, but articulation is the prerogative of man. The phonetic element in speech is heard, while the articulation, or speech proper, is seen rather than heard, even in the development of normal children.

The training of the powers of observation, therefore, is of the first importance in the education of the deaf child. It has been found that the one with the most observant eye is the one who becomes not only the best lip-reader, but also the best speaker. The hearing child possesses more inducements to use his powers of observation than the deaf child, because he looks for the source of what he hears, whereas the neglected deaf child lapses into a world of silence and soon gives up trying to understand his environment. Special training of the powers of observation, therefore, is indicated at the earliest possible moment and numerous exercises for this purpose will readily suggest themselves. The child should be trained to look at things at different angles without moving the head, thus giving the exercise necessary for the development of the ocular muscles. Especially should the deaf child be trained to observe the facial movements employed in speaking, and the mother or governess should be impressed with the importance of keeping her face in a good light.

Next in importance to the development of the powers of observation in the deaf child is the development of the sense of touch. It has been shown that of all the physical senses, the sense of touch is the first to manifest itself in infancy and the first also to retrograde or deteriorate when it is neglected. This fact is recognized in the Montessori method or system of education, in which the sense of touch is utilized at the very beginning as a means of teaching not only the meaning and use of words, but also the writing of them. The tactile sense training cannot begin too early and there is scarcely any limit to the means for its employment. Just as the child may be more easily taught to use his powers of observation in the very early years, so may he be taught to use his sense of touch; and when we consider how essential the tactile sense is to a well modulated and inflected voice, especially in the absence of hearing, we can readily understand the importance of its early development.

The great obstacle to the development of speech in the deaf child is indifference or neglect on the part of those coming in contact with him, and this indifference or neglect is due almost entirely to ignorance. If the mother could know the possibilities in her child, she would not only not give up in despair, but she would take pleasure, as the skilled teacher takes pleasure, in watching and assisting in his development. In no department of educational work, therefore, is the need for the education of mothers so great as in this particular one. The mother should be made to understand that her deaf baby in all probability differs from hearing babies only in respect to his deafness. I say in all probability, for obviously the thing that caused the deafness might also have deleteriously affected the delicate cerebral structures in such close proximity to the essential organ of hearing.

It has been demonstrated, to be sure, that deaf children after the school age are not quite the equal of hearing children, either physically or mentally, but

I am convinced that this is true chiefly because of the handicap which deafness imposes upon the child during the very early years, and to the fact that no adequate provision is made during infancy to cut down this handicap by making other important physical senses do the work of the absent one.

Normal hearing power, of course, is the one thing needful to the natural and automatic development of speech in children, but in one deprived of hearing, this development must take place, not automatically, but as the result of carefully planned voluntary efforts; and my own experience has led me to the conclusion that the training of the powers of observation and the sense of touch according to scientific methods would have the effect of placing the otherwise normal deaf child nearly if not quite abreast his more fortunate fellows in the race of life. This work, however, must begin in early infancy, or as soon as the diagnosis of deafness is made, otherwise the physiological developmental speech period will have passed and the physical, mental, and emotional nature of the child will be deleteriously affected by his inharmonious surroundings and apparent neglect.

It is in the nursery, therefore, that we must look for the beginning of the proper and effective education of the deaf child. It is in the nursery that the child begins to evince inherited tendencies that correspond in their importance to the instinct of the lower animals, and the greatest of these inherited tendencies is the tendency toward the development of speech. To allow the deaf child to pass over this period without acquiring some knowledge of speech and speech-reading and then to expect him later on to acquire these great essentials of life would be like depriving a kitten of the opportunities for the development of the play instinct and then expect the cat later on to be playful and happy.

Having shown that the deaf child's education should begin at the very earliest possible moment, and that it should consist largely in the training of those special senses which are necessary for the acquirement of speech, it remains now to suggest some measures for the practical application of the scheme.

How can the early home education of the deaf child best be accomplished? The first essentials, obviously, are a home and a good mother. The mother need not be especially intelligent, but she must have the mother love and its natural concomitant, an almost overwhelming desire to help her child. In addition to this, she must have the advice of a physician or teacher who understands the physiology and psychology of child life and speech development. The plan that I find productive of the best results is to have the mother witness sample lessons to the child. The mother in these lessons is shown exactly what to do in the intervals between visits. The teacher may construct a pictorial primer for the child and mother, which should be typewritten and made from a plain note-book having detachable leaves. With this primer as a guide, the mother may learn to do much of the teaching nearly or quite as well as an expert.

In the absence of a suitable home and a mother with the ability and inclination to help her child, individual homes and governesses should be procured for deaf infants, and when this is not possible and as a last resort, institutions may be provided, in which very young children may be helped to acquire speech before the school age.

Institutional treatment, however, is preferable only for the defective deaf, or those who should remain in institutions and have custodial care during their lifetime. The otherwise normal deaf child should be educated as far as possible with hearing children and in the environment in which he must live. This early home instruction, followed by day-school instruction, after the school age, would not only be far more helpful to the child, but it would serve as an important measure for the prevention of the deafness which results from intermarriages of the deaf.

SUMMARY AND CONCLUSIONS

Deafness in childhood should be diagnosticated at the earliest possible moment, and the special sense training preliminary to the acquirement of speech should at once be instituted.

The normal child acquires speech before the school age, thus establishing this period as the physiological one for the development of speech. It is the period during which inherited tendencies to speak, amounting almost to an instinct, begin to manifest themselves and make the acquirement of speech a comparatively easy matter.

The best place for the beginning of this treatment is in the home, and the best teacher is the mother working under the direction of an expert. The otherwise normal deaf child should, if possible, be kept in the home during his entire school education, in order that he may have the advantages which accrue from association with his hearing fellows, and also that he may avoid the intimate associations which frequently result in marriage with his kind.

THE DISPOSAL OF THE DEAF AFTER THE SCHOOL-AGE[1]

BY MAX A. GOLDSTEIN, M. D., ST. LOUIS

THE history and development of pedagogic and scientific methods in the training and teaching of the deaf are interesting and important evolutions, vital alike to the interests of the individual, to the increasing class of the deaf, and to the community at large.

The physician is an important factor in the responsibilities assumed by the community in the education of the deaf child. It is his duty to inform himself of the progress made in this department of pedagogy; of the best equipped schools for the training of the deaf; of the enactments of reform measures which have for their purpose the segregation and classification of deaf children in the public schools; of the systematic examination of school children for defects of hearing and speech; of the selection of qualified teachers for such defective children; and of the elimination of all political influences from such educational reforms.

Many of the wheels of this scientific-educational machinery have already been set in motion at home and abroad; legislation has been enacted in many communities whereby the larger educational institutions, especially the public schools, are brought under more careful scientific observation and control. Reports have been recorded from many quarters where systematic examination of school children has been made, and the results of this investigation emphasize the necessity of active measures to remedy these glaring defects.

There are in the United States over 15 million school children. Even in the records thus far gathered[2] it was found that over 20 per cent of the children examined had impairment of hearing. These tests were made in the simplest manner, and where defects were found they were of the most apparent form. Like all other factors of heredity, environment or neglected physical or mental deficiency in a race, if proper measures are not instituted for drastic disposal of such an undermining factor, the evil will grow and the race will be weakened. It is apparently vital, therefore, that all medical organizations, and especially those in otology, must concentrate their influence to assist in readjusting antiquated systems of training and establishing educational reforms to develop and perfect the problem of the proper disposal of the deaf.

The practical application of medical and pedagogical science in its relation to

[1] Presented at the meeting of the Ninth International Otological Congress, Boston, August, 1912.

[2] Volta Bureau.

the deaf child is of varying possibilities. The deaf child must be classified according to the degree of deafness which exists and the time of life in which such a defect has been acquired. The results of special training and the development of these several classes of defectives depend for their efficiency on the character of such teaching and the success with which it can be applied.

The empirical classification of deafness is a matter of degree and of time. The four subdivisions here enumerated group the deaf conveniently for their educational possibilities, especially in the early years of training:

I. Total deafness before speech has been acquired.

II. Total deafness after speech has been acquired.

III. Pronounced deafness.

IV. Hard-of-hearing.

I. TOTAL DEAFNESS BEFORE SPEECH HAS BEEN ACQUIRED

Total deafness before speech has been acquired comprises that class of unfortunates who are congenitally deaf and those who have lost their hearing before they have been taught to speak. These weaklings are not only deaf, but also dumb, and form that large group of children whose education is acquired under tremendous difficulties and hardships; for we have here pupils whose voice and speech-producing organs are practically undeveloped.

It is mainly in the teaching of this class of the deaf that special educators are still at variance in the application of the most serviceable and most effective system of training. Many of the old school still contend that the sign-language and manual system should be taught; the majority employ the combined method; the advocates of progressive and advanced pedagogy champion the cause of "Pure Oralism."

If the end-results obtainable by pure oralism can be practically demonstrated, there can be no further question or discussion of a choice of method, even in the disposal of this most difficult class.

II. TOTAL DEAFNESS AFTER SPEECH HAS BEEN ACQUIRED

In the sub-class of total deafness after speech has been acquired some of the teaching difficulties are eliminated. In this class the child has acquired speech to a greater or less degree, depending on the age of the child before deafness has developed. One of the serious difficulties, therefore, namely, the teaching of articulation and the production of speech, is here eliminated.

When pupils of this group of the deaf are still assigned to classes taught by the sign-language or "Manual System," or even by the combined system, we contend that otologic pedagogics are taking a backward and not a forward step; we contend, furthermore, that the application of the older teaching systems is a serious injustice to such pupils, and distinctly unscientific pedagogics.

The pupils of this group have acquired speech—a wonderful asset in their future social intercourse—and this should be cultivated, not stunted. Articulation is one of the most difficult factors to be acquired by the deaf pupil, or to impart by the teacher, and the preservation of every vestige of this important factor should be the aim of every teacher. All sign-language, manual system and even combined method, should be abolished, and articulation and speech-reading developed as the rational system of instruction possible and practical in this group. It is by concentrated effort in the development of pure oralism that the most satisfactory results will be obtained; therefore we advocate the elimination of all disturbing and distracting elements as even the combined system may produce.

III. PRONOUNCED DEAFNESS

Pronounced deafness is applied to those who possess sufficient function of hearing to distinguish the sounds of the human voice, whereby they may be trained by the auricular method to differentiate vowels, consonants, words, and phrases, classified by the British Royal

Commission on the Deaf as the "Semi-deaf."

A more accurate means of determining the limitations of hearing has been definitely developed by the achievements of Bezold by means of the continuous tone-series of tuning-forks. Children who cannot appreciate the sounds of the tuning-forks within the tone-limit of the musical scale from *b'* to *g''* have been found incapable of sufficient perception of speech to warrant their successful training exclusively by means of the auricular method. This Bezold test is known as the "word-limit" of the musical scale as tested by the tuning-fork series. When this relatively small portion of the sound scale is present, and the other functions of the child are found to be normally developed, it is reasonable to assume that this child can be taught to speak naturally by the auricular method.

V. Urbantschitsch, of Vienna, obtained and demonstrated the first successful results in the education of the deaf of this class by a systematic course of training by aid of the voice. It was my privilege to be present and to participate in the demonstration of the first results of this aural practice, in 1893. The first demonstration of results obtained by this system in America were described in my paper presented before the American Academy of Ophthalmology and Oto-Laryngology, in 1897, with demonstration of a class of 16 children from the St. Joseph School for the Deaf, showing the marked improvements obtained by this method.

Hartmann has devoted much time and study to advanced oral and aural methods of instruction for the deaf in Germany, and by his patient and persisting energies greatly stimulated these progressive forms of teaching. Wanner, of the Bezold School, recently gave a convincing demonstration of the value of segregating and selecting cases by tuning-fork tests, and then successfully teaching them by the auricular method. Ferreri, of Rome, has contributed much to the literature and active service in popularizing progressive educational measures in Italy.

To James Kerr Love, of Glasgow, belongs the credit of bringing the medical profession in closer relation with the teachers and the institutions of the deaf; of presenting a valuable comparative study of the teaching methods employed, and a classification of institutions for the deaf at home and abroad.

IV. THE HARD-OF-HEARING

In this class of hard-of-hearing I have included the large number of children referred to so frequently in the reports of the systematic examination of school children as having nasal obstruction, adenoid growths, enlarged tonsils, suppurating ears, or other mechanical or pathological conditions producing a moderate degree of impairment of hearing.

These children are not sufficiently handicapped to require training in special schools or by special methods, but they should be assigned to smaller classes, where better individual instruction may be given and where these defects may be constantly before the mind of the teacher, so that allowances for insufficient scholastic work may be made and more careful supervision directed.

V. ACQUIRED DEAFNESS IN ADULTS

To the accepted classification of the deaf as here presented might be added that large class of the adult incurable deaf who, from oto-sclerosis, suppurative catarrhs, peripheral or central neurologic, or other pathologic causes, have lost the faculty of hearing later than the 12th or 13th year of life. After this age the faculty of speech is so definitely developed and mentally fixed that, even though the individual becomes totally deaf, he never completely loses this practical form of thought expression.

In support of my plea for the advanced methods of teaching the deaf, we have succeeded in arranging for this Congress a practical demonstration illustrating the educational possibilities in the several types of deafness as here set forth.

We have invited the well-known edu-

cator of the deaf, Prof. John Dutton Wright, of New York City; Prof. C. A. White, of the New England Conservatory of Music, and the American exponent of the Mueller-Walle system of speech-reading, Miss Martha A. Bruhn, of Boston, to participate with selected pupils in this demonstration.

The demonstration will include both young and adult pupils, congenitally deaf, who have been taught by the oral system exclusively, and adults with acquired deafness who have taken up speech-reading after the degree of deafness had advanced to a stage which made ordinary social intercourse impossible.

The crowning feature of this symposium will be the presentation of the famous blind-deaf girl, Miss Helen Keller, who will address the Congress in English, German, and French. Professors Wright and White will demonstrate respectively with Miss Keller the system by which this distinguished pupil was taught to read the lips and to articulate, and finally how her speech was strengthened in quality and quantity by systematic voice and breathing exercises.

If it has been proven possible to train the congenitally deaf pupil by the pure oral system and speech-reading, how vastly greater are the opportunities of those who have become deaf *after* acquiring speech.

To teach articulation is far more difficult than to develop a good lip-reader.

It may not be as fascinating to the otologist to contribute his energies, his logic, and his talents to the development of this question, which so vitally affects the welfare of the community and of all human kind, as to concentrate his time on original research or on the intricate pathology or operations on the labyrinth; but we are confronted by the appalling fact that 4 million defective school children exist in the United States alone (and similarly large percentages in all other countries), and this obligation, to contend intelligently and successfully, must be met, and the otological profession must actively shoulder its share of this obligation and its responsibilities.

You are not discharging this obligation completely by simple indorsement and approval of the feeble efforts of a few of your colleagues who have championed this cause; we plead for your individual participation; by united efforts much can be accomplished, and the emancipation of the deaf would be a most glorious conquest.

MR. DOOLEY ON LIP-READING

BY LUNA MAY BEMIS (WITH APOLOGIES TO PETER FINLEY DUNNE)

TH' TOP ov th' mawnin' to ye, Misther Hinissy," and Mr. Dooley sat down on the barrel to pass the time of day with his friend.

"A rally foine summer day," said Mr. Hennessy, using his shirt sleeve in the absence of a handkerchief to remove the superabundance of perspiration from his forehead. "Why, Martin, ye look a bit undther th' wather; what's th' matther?"

"Nawthin'," said Mr. Dooley; "nawthin' at all; on'y I wuz thinkin' ov me boy, th' wan that's deef an' can't talk much, ye know."

"What ails him," with ready sympathy; "is it th' mazles or th' hoopin' cawf?"

"Nayther one nor 'tother," said Mr. Dooley. "Th' schoowlmasther, he writes me a letter that me boy, Pat, he's took to smokin', an' stole some cigareets off ov wan ov th' tachers. Shure, an' he niver larned that fr'm his daddy. I'd naw more brake th' sivinth commandment thin I'd be afther braking me pipe. Naw," said Mr. Dooley, "all this comes ov his bein' away fr'm home."

"Well," replied Mr. Hennessy, consolingly, "if Pat has bin an' broke wan ov th' commandments thare are still nine more left to brake. But I thought it wuz th' jooty ov thim proffisors down thare to wallop th' bad habits out ov their charges bifore they git a chance to go to

roost. No, Martin, 'tis clare ye awta have kep' th' boy with his ma."

"Oh, but Pat is larning by th' gr-reat Oril method; that, Misther Hinissy, is whin they larn to talk Inglish with th' Irish left out. Pat used to talk with his fingthers faster thin ye kin fly a kite; but now they won't let him do it iny more. All th' childrin must talk in the natchural way loike ye an' me does. Yes, th' manuwal alphabet is a back number an' no mistake. Whin I wuz down thare th' Masther sez to me, 'Misther Dooley, ye must have yer mustash an' yer whiskers cut off.' 'Naw,' sez I; 'I can't do that, for I would be afther looking loike a hin without iny fathers. Naw, Misther Proffisor, ye must tache me boy to see what I say through me whiskers.' "

"Oh!" exclaimed Mr. Hennessy, "that's what they tache thim to do, is it, to hear with their eyes?"

"Just so; furst they lar-rn to say Pa an' Ma, an' thin they go right along lar'rnin' to make speeches standing up in th' floor. It 'ul take some toime before Pat kin speechify loike Roosevelt, Misther Hinissy, but heez gittin' there alright. Th' Proffisor, he sed that me boy wuz a loikely lad, but that th' Inglish tongue wuz not a perfect langwage to understand with th' eye alone. It has a lot ov woords that look just aloike whin ye spake thim; ye could tell Pat to spell man an' he might think ye sed pan or ban."

"Th' way they do it is to have th' tachers say th' woords over an' over again until th' scholars raymember just how each woord looks on th' lips ov him that's doin' th' talkin'. A big sciwence it is, this lip-readin'. Th' lar-rnin' ov it is somethin' loike a lottery, Misther Hinissy; ye make a try, but ye may or ye may not git th' thing ye want. Thim woords that look aloike on th' lips, but are not spelled th' same an' mane different; thim woords are loike a puzzle to me boy, Pat. Homapainus, or some such loike, is what they call 'em. Whin I wuz down thare, sez I to Pat, if ye want another new coat ye write home to Ma an' she'll be afther sindin' wan to ye. Pat shook his head."

"'Naw, I don't want none; th' masther sez no goats are allowed in this here schoowl.' "

Our friend, Martin, paused to get a few puffs at his pipe and Mr. Hennessy had a suggestion ready.

"Well, I'm afther thinkin' that ye awta git Pat some eyeglasses to wear. If he hed four-r eyes he could see better than with two. He could see twict as much."

"That's what I wuz sayin' to me woman," continued Mr. Dooley, "whin I come back fr'm th' schoowl. But naw, she sed, that wuz not th' matther at all; she sed it wuz more sharpen-in' up ov th' wits he nayded, a cultayvation ov hiz intellect. An' perhaps, Misther Hinissy, she's afther bein' right in her opinions. They told me down thare that th' lad's mind wuz bein' trained to jump at th' woords hiz eye cannot see."

"Well," said Mr. Hennessy, separating himself from the box on which he had sat conversing, "he awta have no tr-rouble about that, for outside ov th' Hinissy's thare niver wuz a betther bunch thin the Dooley's fer jumpin' at inybody that star-rted to git frish with thim."

"It strikes us that the deaf, in proportion to their number, hold more conventions and do more talking with a minimum of good results than any other class of people on the globe. Since we caught the 'convention habit,' our pocket-book, never in a plethoric condition, has become alarmingly anæmic, and if we keep it up much longer, it's us to a home for the aged and infirm."—*Kansas Star.*

The editor of the *Star* might have said also that the deaf have a mania for starting funds, memorials, and the like. The deaf as a class are not rich, and yet they are "held up" at every turn for this and that object, worthy in itself no doubt, but the support of which means hardship to many a deaf man's family. The leaders should go a little slower about taking up projects that call for money that in these days of high cost of living can ill be spared.—*Kentucky Standard.*

Nearly 90 per cent of the teachers of Switzerland are men, and they are employed in the same school for life or a long term of years.

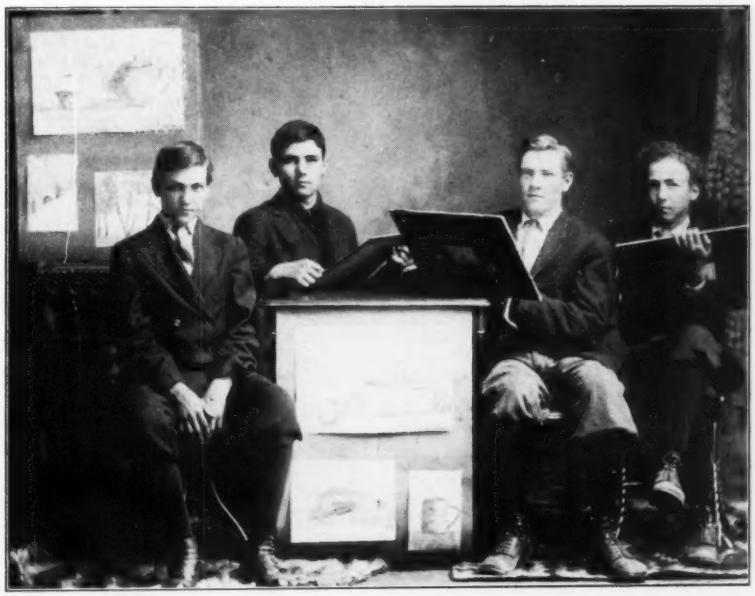
"Every subject should be so taught as to initiate the pupil into a larger field of useful knowledge."

WISCONSIN'S DAY SCHOOLS FOR THE DEAF

A PICTORIAL representation of what this progressive State is accomplishing in its well-established chain of day schools. These photographs are reprinted from the "History and Handbook of Day Schools for the Deaf and Blind," compiled by State Inspector A. J. Winnie and issued by State Superintendent C. P. Cary.

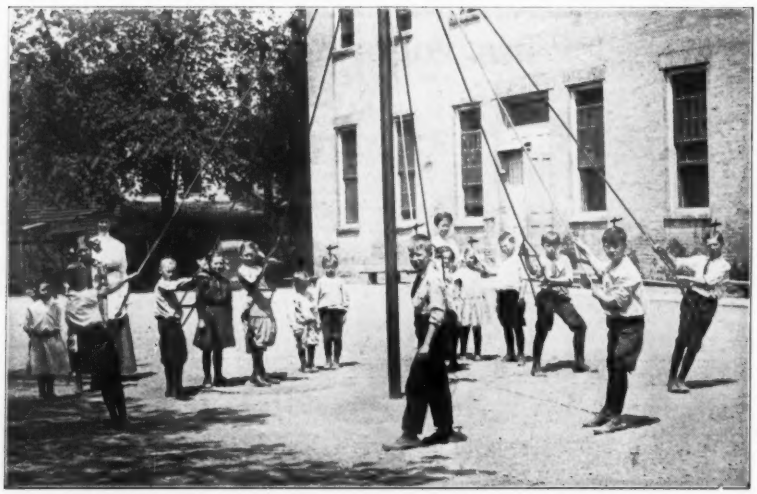
EIGHTH GRADE IN THE MILWAUKEE DAY SCHOOL FOR THE DEAF

DEAF AND HEARING BOYS PLAYING TOGETHER AT THE PLATTEVILLE SCHOOL. THOSE MARKED + ARE DEAF



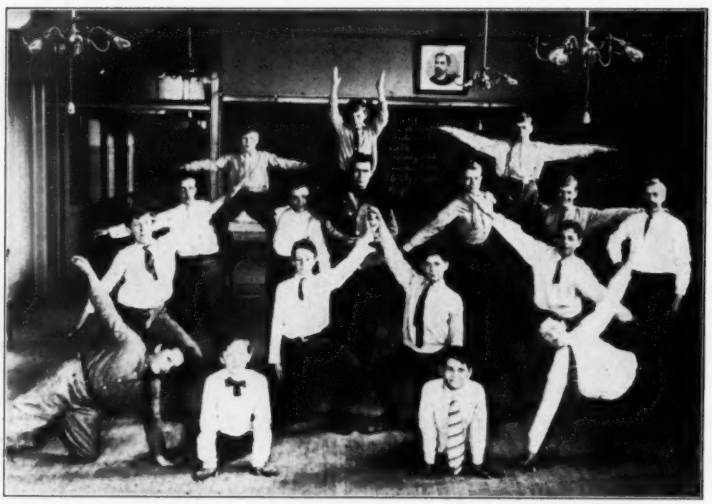
A DRAWING CLASS IN THE GREEN BAY SCHOOL

TEACHER AND PUPILS OF THE LA CROSSE DAY SCHOOL FOR THE DEAF ON ANNUAL PICNIC



DEAF CHILDREN PLAYING WITH HEARING CHILDREN ON THE SCHOOL PLAYGROUND AT GREEN BAY.
THOSE MARKED + ARE DEAF

CLASS IN COOKING AT THE PLATTEVILLE SCHOOL



PHYSICAL CULTURE CLASS, MILWAUKEE SCHOOL

DRILL IN RHYTHM, MILWAUKEE SCHOOL

DEAF CHILDREN IN MANUAL TRAINING CLASS WITH HEARING CHILDREN AT THE SHEBOYGAN SCHOOL. THOSE MARKED + ARE DEAF

A SEWING CLASS IN THE GREEN BAY SCHOOL

THE HARD-OF-HEARING CHILD IN THE PUBLIC SCHOOL

BY ETTA V. LEIGHTON

ONE million children with defective hearing among the school children of the United States!" So says Dr. T. W. Wood, of Columbia University. Twelve thousand seven hundred and twenty-one persons are enrolled in 152 schools for the deaf, according to statistics compiled for March 1, 1912, by the Volta Bureau. If the total enrollment in schools for the deaf is included in Dr. Wood's figures, we have a little over one-eighth of the total number in special schools for the deaf. What is done or can be done for the remaining seven-eighths?

When the Chicago tests were made, in 1899, it was found that on entrance to grade work at the age of six, 15¼ per cent of the pupils were defective in aural acuity. Nine and one-half per cent were defective in one ear, and 61 per cent of those having speech defects were found to be defective in hearing. These figures are startling, but they are certainly very nearly correct. Dr. Max Goldstein, speaking on "The Physician and the Deaf Child," in 1910, said that in the records thus far gathered it was found that over 20 per cent of the school children in the United States had impaired hearing. In the city of New York the Department of Child Hygiene has found between four and five thousand children whose hearing is sufficiently defective to be noted in the more or less superficial examination which is given them.

The Rhode Island tests, conducted by the Department of Education through the individual teacher, corroborate in general the conclusions from tests given elsewhere. In Providence, of 22,618 children examined, 2,365 were reported as defective in hearing—a little over 10 per cent. Yet even these figures, though the percentage is only half that found in other cities, have been criticised as much in excess of what tests by physicians would indicate.

The matter of tests and their bearing on the subject will be taken up later. We are concerned now with the fact that the hard-of-hearing child is in the public school in large numbers; that wherever tests are made, however insufficient, they show the presence of pupils whose impaired hearing has not been previously noted, and that reliable figures from all over the country indicate that between 15 and 20 per cent of the public's children are in need of special attention because of impaired hearing. In 1902 Dr. Alexander Graham Bell said: "A large number of pupils are in the public schools who have defective sight or hearing or are backward. The number having defective hearing probably outnumbers the total deaf-mute population. They are drifting along in the public schools and teachers do not know what to do with them."

The hard-of-hearing child is in the public school. The question arises, "Must he continue there?"

Let us take Chicago's 1899 figures. Is it possible to provide special schools yearly for 15¼ per cent of the entering school population? If no hard-of-hearing children are admitted to the public schools, how find places for them and for those defective in sight, defective in physique, defective in mentality? Suppose the small community has two or three hard-of-hearing children, will it be likely to provide classes for them any more readily than the large city, with its two to five thousand hard-of-hearing children? Suppose the large city does plan centers for such children, there are the questions of transportation, the age at which children may be expected to traverse long distances to school, and many other obstacles in the way of setting apart from his fellows a child whose hearing is not as acute as might be desired.

This question of segregating all the abnormal and subnormal pupils and leav-

ing the public schools to the normal pupil alone is open to discussion if not attack from many points of view, especially from the point of advantage even to the normal pupil, for it must be borne in mind that we are not here dealing with the totally deaf. We are concerned with the boy and girl whose hearing powers are weak or decaying, but who can be and will be on a level with his better hearing associates if his case is given due consideration.

Economic reasons seem to declare that the hard-of-hearing child must continue in the public schools. But even economy must give way if science declares that justice to the hard-of-hearing child demands his exclusion from the public school, or even if the comfort and well-being of his hearing comrades demand that he be separated from them. Fortunately, we have the best of evidence that the well-being of both the hearing and hard-of-hearing child is subserved by their close association in the class-room, and that the best interests of society and education may be forwarded by educational methods which shall aim at just such help as the hard-of-hearing child needs.

Let us ask some of those outside the public-school work, yet who are competent to speak on the deaf child, whether they consider the hard-of-hearing child a fit subject for public day-school instruction.

Dr. A. L. E. Crouter, superintendent of the Institution for the Deaf, Mt. Airy, Pa., in "The Development of Speech in the Deaf Child," says: "Children who have enough hearing to develop the motor center through auditory stimuli should not be placed in schools for the deaf. Their development will be more rapid and more nearly normal if they are compelled to rely upon auditory impressions." Again he declares: "Let me repeat most emphatically the opinion that children who possess decided hearing powers should never be associated with deaf-mutes." I take it that what we public-school teachers call a hard-of-hearing child Dr. Crouter would consider should be educated among normal children in the public school.

Dr. G. Hudson Makuen, in "The Prevention of Deafness and the Instruction of the Deaf Child," said: "Those whose deafness is so slight as to interfere but little with their school work can best be educated, of course, with hearing children; but for those who can with difficulty hear the teacher special classes should be provided." Dr. Makuen doubtless means when the difficulty in hearing the teacher lies entirely with the pupil, but it is quite too frequently not the child who is at fault when he does not hear and understand the teacher, and before making special classes it would be wise to determine this point. Dr. Makuen would do so; the school authorities ought to do so.

Dr. Makuen says further: "I would postulate the needs of very deaf children as follows:

"1. An earlier beginning of their instruction.

"2. A closer association with hearing children.

"3. A more scientific classification for educational purposes.

"4. A more satisfactory adaptation of methods to the individual mental capacity of the child.

"5. Home environment and day schools for all except the mentally deficient and blind, who should be placed in institutions and kept there perhaps during their lifetime."

If "a closer association with hearing children" is a need of very deaf children, how much more is it necessary for the child who is merely hard-of-hearing!

Dr. Gulick, with his customary common sense, speaking before the National Educational Association in 1909, said: "There is also an increasing experience tending to show that inasmuch as these children, when adults, should and largely will live among normal people, it is an advantage to have their education as far as possible conducted among normal children."

Director Koller, of the Deaf and

Dumb Institution of Munich, finding traces of hearing among deaf-mutes in the institution, gives the best possible reason for not sending hard-of-hearing children to institutions for the deaf. His results are summed up as follows: "These children command a vocabulary that the totally deaf can never obtain. Their manner of expressing their thoughts is equal to that of hearing people. Their readiness to speak is surprising. Similar results can never be obtained in totally deaf children. They are unattainable to partially hearing children who are constantly instructed together with their totally deaf comrades. Separation of the partially hearing pupils from the totally deaf ones and instruction in separate rooms, or, if possible, in separate institutions, must be our aim."

I believe that these partially hearing children belong in the public schools. They are there in large numbers; they must continue there, for, as Dr. Goldstein says: "They are in no sense candidates for schools for the deaf." And I hope to show that their presence is in no wise a detriment; that it may even be beneficial if school authorities recognize the situation and prove adequate to the emergency.

How shall a teacher determine whether any of this large class facing her and waiting on her words of wisdom are hard-of-hearing? "Let her have the school physician or the school nurse test them," says one. Alas, though medical inspection of schools is two decades old in this country, there are communities, large and prosperous, whose inhabitants have never even heard of such a thing and other communities which steadfastly refuse to countenance it. Rhode Island offers state aid, in money, to communities which will install medical inspection, yet many towns stubbornly refuse to do so. What can teachers in such towns do except make the tests themselves? I maintain that for purposes of teaching the teacher can make adequate tests, though for purposes of diagnosis let us by all means have examination by the most accomplished aurist obtainable, and let us obtain at any sacrifice the best possible treatment for the impaired hearing. But for statistics as to defective hearing and for information to enable the teacher to intelligently aid the child, the ordinary school-room tests are sufficiently accurate.

This question of testing and publishing the results is yet a sore point with public-school authorities. It almost seems as if they felt they were in some way reflected upon if children under their care are reported as defective in vision or hearing. Possibly they would object to a census of the blue-eyed or black-haired children in their schools. This attitude toward tests and statistics is more widespread than is generally acknowledged and is at the bottom of the terribly slow rate of progress we make educationally. Yet school authorities are awakening to this need and efficiency experts are testing the various school systems. F. B. Brandt says: "The first need of educational science is facts, accurately observed and recorded." When there is less altercation as to the accuracy of statistics from tests and more interest in the study of conditions to which they point, much educational good will result.

Of the necessity of tests there is much to be said. "The bounty of nature provides us always with more than an actual need, and it is possible to lose nearly one-half of the normal hearing power, especially if this loss is so gradual as to permit of the formation of compensatory sense habits before the practical, basal, normal average is reached. This loss, however, implies something more than subtraction from the working power of a single sense. That impairment of hearing power should be an inconvenience is readily understandable; that it can make so large a demand upon the nervous energy as to be a source of fatigue needs personal experience or observation for its full appreciation." [1]

[1] Clarence J. Blake, of Harvard University, before the N. E. A., on Medical Inspection of Schools, 1903.

It is of little interest to a community what percentage of hearing an aurist finds in John, but it is of vast interest to John and the community whether he can hear what his teacher and companions say. So the test for John is the test of actual school-room conditions. Can he hear enough of what is said to continue his studies intelligently?

"Enough of what is said." Let us emphasize the value of the voice in testing children. Bezold, professor at the University of Munich, said of the use of the voice for hearing tests: "There is hardly a better means, nor will there ever be any, to obtain quickly a general survey of the ability of hearing." Sarah Jordan Munro quotes Bezold as follows: "Twenty to twenty-five meters is taken as the distance at which a normal ear can perceive all whispered words. The words of numbers from 1 to 100 are used by aurists, for they contain all the different sounds sufficiently complete."

Dr. Clarence J. Blake says: "The Summer School, Harvard University, tests on hearing lay stress on the value of the voice, since in the case of the school teacher it is the sound to which children are expected to listen and by which they are largely trained. The voice, the tuning-fork, the watch, are used, it being understood that the duty of the teacher is limited to the selection of the cases to be subsequently submitted to expert examination."

Without doubt, all suspected cases should be taken in charge by experienced physicians, and school officials might well base their statistics on reports as authoritative as possible. But for purposes of class-room instruction the teacher had best consider as hard-of-hearing those children who have difficulty in understanding her voice, the voices of the other teachers, and the voices of a majority of their schoolmates.

Since we have located the hard-of-hearing child in an ordinary class-room, it may be well for us to observe him rather closely to discover his actual needs and possibilities. We shall find him, in most instances, unfortunately situated. But if those of us who are interested in him will give wide publicity to his needs we shall find public-school teachers anxious to respond to suggestions for his help and guidance.

Meanwhile here he is, apparently stupid, apparently inattentive, perhaps a little morose and stubborn, backward it may be for a child of his years. Dr. Goldstein describes him in not-to-be-forgotten words: "This child acquires an education under tremendous difficulties. He cannot hear the directions given in the school-room, the oral recitations of his classmates, or the questions put to him. The frequent reprimands of the teacher are discouraging and oft-times produce a sensitiveness and fear which may wreck the entire nervous constitution of the little unfortunate; he becomes indifferent to his work; he sees his classmates promoted and loses ambition; his school life, which the healthy child always looks back upon as one of the most pleasant reminiscences of his life, becomes to him irksome and a source of constant regret, and he often discontinues his scholastic work long before he has acquired an education sufficient to fit him for his strenuous labors as a useful citizen. This is not a pen picture, but a brief, unvarnished description of a child with defective speech or hearing, selected at random from the 20 to 30 per cent of our entire enrollment of school children in the United States. We must recognize, then, the importance of systematic examination of all school children in order that more definite attention may be given to such defects as they are singled out."

Miss Mary T. McCowen makes an important contribution to this subject in the following words: "Another large class of children to whom speech-reading may be of untold value is the adventitious deaf, whether total or partial, and the congenitally hard-of-hearing. Some of these children are permanently in schools for the deaf; many hundreds are scattered throughout our public

schools and, misunderstood and harshly judged, as they often are, should command our interest quite as much as the congenitally totally deaf child. All who are too deaf to hear the question and response of the ordinary recitation in the regular school-room, unless given speech-reading, will ultimately fall behind their classes, the school work becoming more and more difficult and impossible as they advance in the grades, and as more is expected of them, until they finally reach a point of utter discouragement, where the effort to participate in the activities of the school-room continually leads to uncomfortable mistakes and misunderstandings, their unhappy isolation being far greater than that of the deaf-born, for they know what they are losing and rebel bitterly against the deprivation."

What effect has the presence of this unfortunate child on the other children? Do they sympathize with him or laugh at him? Do they tend to slow up to his rate of progress, his standard of attention?

What effect has his presence on the teacher? Does she become impatient; does she neglect him; does she estimate correctly his work and possibilities?

Let us answer these questions by a picture of the school-room as it might be, where the hard-of-hearing child benefits and is benefited by his hearing classmates. To begin with, the teacher has discovered with which ear John hears best and has seated him most advantageously. She has talked to John about the improvement of his hearing. He is probably under treatment and is already encouraged by the interest the teacher is taking in him. He believes her when she tells him that he will find his understanding greatly improved if he pays close attention. She reminds him of the fact "that when the eyes are closed many words are lost either in a general conversation or in listening to an address" (Makuen). She may even have been told and may pass the knowledge on to John, that "it is often sufficient to remind the deaf of the importance of acoustic attention to obtain in a short time such an improvement of the acoustic perception that he can notice noises, sounds of words, and musical notes which he had not heard for a long time or, more exactly, he had not observed" (Ferreri). John's teacher may even explain to him the basic idea of lip-reading or, if his case requires it, she may obtain for his parents information as to where John may be taught to read the lips.

"If such children should be recommended to a teacher of the deaf to get speech-reading as soon as their growing deafness was discovered, a majority of them could return after a time to their classes and, using speech-reading, complete their education with hearing companions" (McCowen).

Best of all, the teacher has made John feel that he has no more excuse for not keeping up with his classes because he has lost his hearing than Three-fingered Brown, of the Chicago team, would have for not playing baseball.

How has John's presence benefited the teacher? First, in quickening her insight and in making her see that she must adjust her methods to the conditions in her school-room; that her business is the education of this class, all of them; that she must take the child where she finds him and furnish means for his development. She has also gained new light on the question of fatigue and gauges her work accordingly.

Probably the first improvement in her methods will come in her voice. The ordinary public-school teacher is very deficient in voice power. Mrs. E. J. Ellery Thorpe, specialist in speech impediments, asks: "Are the voices of the teachers models for those of the children? In the teaching of reading, is strength trained into the breathing muscles or into the throat, lips, and tongue?" In reading up on the subject of John, the teacher finds articles on articulation; discovers that the vowels are the soul of the language; finds her own voice improving and the voices of the children improving also. Her language work in-

cludes the niceties of enunciation; slovenliness of speech is continually fought against; blackboard reproduction of the slurred sounds shows the hideousness of such speech, and drill on clear-cut tones raises the articulation standard of all concerned.

That such care in articulation should be demanded of every school, if the purity of our English speech is to be preserved against the encroachments of foreign idioms and dialects, is to state a truth likely to be neglected because it lacks the human interest element; but to say that we must all speak carefully in order to help our classmate to understand is an argument cogent with any group of children.

And the effect on the other children? Well, if the teacher is alive to the possibilities in the training of John, his classmates are exceptionally fortunate in being associated with him. Every added item of method brought forward by the teacher for John's benefit is equally beneficial to them, for it cannot be insisted upon too strongly that John is like them except in defective hearing. Every pedagogical method useful for John is useful also for his hearing comrades. In addition, every effort John's companions have made to help him keep his place among them has benefited them beyond any number of lectures on civic responsibility and neighborly kindliness. They have been living the Golden Rule, and they and John are mutually blest.

A few more years of testing, a little better understanding of the subject, of the benefits to the hard-of-hearing child which his undoubted right to a public-school education may bring, and of the benefits to the normal pupil of special effort on the part of the teacher, and we shall find the said teacher better equipped for her task.

To send out as teachers young persons who have dealt only, or even mainly, with the education of the normal child is analogous to sending out as doctors, general practitioners, persons who had observed the human body only under conditions of health. "But what of the science of education and what of the schools where this science is taught? There are normal schools and colleges and normal institutes and associations, small and large, in countless numbers, but in them all, without exception, the center of their work and study is the normal child. But as the person in full health would be but a poor subject for a medical clinic for purposes of study or demonstration, it would seem that the normal child cannot be the best material or sufficient material, at least, for the normal school for purposes of experimental study and practice." [2]

That this study of special classes is beneficial to the general teacher cannot be questioned. "Speaking from the point of view of the training of the normal child, I believe that the study of the unusual child has already produced an influence upon the teaching of the usual child that is illuminating, instructive, and inspiring. In the first place, such study has demonstrated the almost infinite possibilities of education. Such cases as those of Laura Bridgman and Helen Keller have taught the larger lesson that the 20th century must regret the dictum of the 19th century for the survival of the fit, and put in its place the higher principle of fitting to survive.

"Moreover, it has shown the superior effectiveness of special teachers and special methods to meet individual needs, all of incalculable worth in revising the methods of handling the normal child" (F. B. Brandt).

For the general teacher's task is summed up in these words: "Any teacher who undertakes to train this heterogeneous mass must have a pretty definite knowledge of the material with which she is to work. She must know the training and methods in vogue in the best institutions of the country; she must know what mental deficiencies mean, how caused, how they may be overcome. She must know how to make simple tests of the special senses and

[2] F. W. Booth: Lessons to be Learned by the General Teacher from Teaching Language to the Deaf.

how to train them to their highest development" (A. M. Nash, N. E. A., 1910).

The general teacher must continue to be trained by the normal school. I therefore bespeak for the normal student better voice training. Mrs. Ellery Thorpe says: "My experience leads me to believe that if a voice properly placed were one of the requirements in our normal schools, if the voice of every teacher could be a model for the pupils, we should soon begin to see an improvement." This voice training must include a thorough grounding in the principles and practice of articulation, knowledge equally applicable to the little foreign child, who must learn English, and to the little hard-of-hearing child, who must not be allowed to forget it.

The normal student should be provided with books, material, and courses on the teaching of the deaf, since more than any other class of defectives, the hard-of-hearing children will continue as members of the regular classes in the public school. For the girl in training I bespeak opportunity to observe the methods of teaching the deaf wherever there are schools devoted to the deaf which are accessible to normal students; and for the general teacher in active practice, the advice and assistance of a supervisor trained in the care and education of deaf children.

The first two factors in the education of the general teacher are in the province of the normal school. The trained supervisor must be supplied by the school system. Surely any system needs and can afford an officer whose business it will be to see that the hard-of-hearing children get their fair chance at the education that is rightfully theirs. In most communities such a supervisor would be supplied more readily than a teacher of music or drawing. Whether the superintendent, the school nurse, or a special officer is charged with this supervision will depend on community needs and conditions, but the fact cannot be ignored that supervision is absolutely necessary if hard-of-hearing children are to be protected in their rights, for as they do not differ from normal children in noticeable or offensive ways, they are likely to remain in the school-room, yet likely to be neglected because their education requires more effort than does that of their hearing classmates.

Whether there shall be special classes in the larger buildings, special school centers in the larger cities, or whether any special provision shall be made for deaf children does not lie within the scope of this paper. We are concerned with the hard-of-hearing child and his chances with the general teacher. He must stay in the public schools. "I have included in the class of slight deafness a large number of children referred to so frequently in the reports of the systematic examination of school children as having nasal obstruction, adenoid growths, hypertrophied tonsils, suppurating ears, or other mechanical or pathological conditions producing a moderate degree of impairment of hearing. These children are not sufficiently handicapped to require training in special schools or by special methods, but they should be assigned to smaller classes, where better individual instruction may be given and where these defects may be constantly before the minds of the teacher, so that all allowances for insufficient scholastic work may be made and more careful supervision directed" (Goldstein).

This careful supervision will prevent the cruel mistake of assigning the hard-of-hearing child to the class for mental defectives. A test of all children in classes for defectives would be valuable in showing how many children now in "ungraded rooms," "special classes," or who are "repeaters" are in their present condition because of defective hearing and neglect.

Neither normal schools nor school systems will adequately prepare the general teacher for general work until the public demands it and the teachers themselves wish it. Of the 500,000 teachers in the United States today, how many know even in a vague, general way what is being done for deaf and hard-of-hearing

children? What does the general public know? Has today's newspaper any item relating directly or bearing remotely on the deaf?

Whatever the answer to these questions may be, it is true that much remains to be done in awakening the public in general and the teacher in particular to the possibilities of education for the deaf.

Teachers' associations everywhere should be asked to include the subject in their programs; normal schools should be asked to reply to questionaires concerning the amount of time and teaching they give to the subject; school systems should be interrogated along the same lines. The daily press should be supplied with as many interesting items as possible that the public may develop a healthy curiosity on the subject which will aid in obtaining adequate legislation, and finally some means should be found to awaken in the general teacher now in the work an abiding interest in and a love for her handicapped little charges, which will induce her to use every effort to promote the education and so the usefulness and happiness of the hard-of-hearing child in the public school.

BEGINNING ARITHMETIC

BY JENNIE L. COBB

I SHOULD like to add a word to the article in the VOLTA REVIEW for January, entitled "The Teaching of Concrete Problems to Deaf Children." I have used a form of stating a problem which has brought good results.

As soon as pupils have language enough to understand the contrasting meaning of the words "bought" and "sold," "received" and "gave," "kept" and "gave away," and other such terms, I give problems involving these words stated in this manner:

(1) A boy had five apples; he ate two; how many did he have then?

(1) A boy had..... 5 apples
He ate..... 2 apples

He had..... 3 apples then
because $5-2=3$.

(2) A girl had four peaches and she bought three; how many did she have then?

(2) A girl had..... 4 peaches
She bought..... 3 peaches

She had..... 7 peaches then
because $4+3=7$.

(3) A man had a nickel; he spent two cents for a newspaper; how much money did he have then?

(3) A man had a nickel... 5 cents
He spent..... 2 cents for a paper

He had..... 3 cents then
because $5-2=3$.

(4) Tony spent two cents for an orange and three cents for a ball; how much did he spend?

(4) Tony spent..... 2 cents for an orange
and ..... 3 cents for a ball

He spent..... 5 cents
because $2+3=5$.

(5) Louise bought a paper doll for six cents and some chewing-gum for five cents; how much did they cost?

(5) Louise bought a paper doll for... 6 cents
and some chewing gum for..... 5 cents

They cost..... 11 cents
because $6+5=11$.

(6) Lucile had seven cents and Blanche had three cents; how much more money did Lucile have than Blanche?

(6) Lucile had... 7 cents
Blanche had... 3 cents

Lucile had..... 4 cents more than Blanche
because $7-3=4$.

I state the problem first entirely in written language, and then insist that it

be solved by stating it in this visible, formal way, the numbers to be added or subtracted in a vertical line one above the other, with the answer immediately under the numbers added or subtracted, and the reason for the process always following. I never accept any work unless it is stated in these two ways—first in written language and then the formal process. As the Five Slate System reduces language teaching to a system, so in arithmetic the analysis stated in the simplest formal way produces system.

Since we have to teach through the eye, a process which appeals to the eye in the simplest way impresses most. It proves well worth while for the teacher to spend an hour or more a day for a week or two upon this method of stating reasoning until it is grasped by most of the class. After this I find that they progress perceptibly, while spending only a few minutes a day on the work. The dullest pupils sometimes do well with this work and like it. The secret of success, I think, consists in making haste slowly, being thorough, and insisting upon a complete statement of every process.

Deaf children need to see stated plainly every act of the mind in doing arithmetic. As has been said, we need to make them understand the problem by acting out the process whenever possible, by buying or selling, losing or finding, according to the statement of the problem. Thus the arithmetic lesson becomes a language lesson as well, and if we insist upon accuracy of statement we are teaching careful habits of thought and action. Since we must lead from the known to the unknown, the known should be thorough and accurate, made so by painstaking repetition.

I find in teaching compound numbers that if one table is learned thoroughly, so that the pupils have a flexible use of it, other tables are easily mastered.

At first thought we do not perhaps see anything new in this; but it is the idea of stating problems in a form so that the children can grasp the process at a glance that I wish to emphasize. We all know how little concentration our children have; how difficult it is in the earlier years to hold their attention for very long. So if we present to them something readily comprehended, we have seized the psychological moment for teaching that particular thing. If we could thus classify all knowledge we might reach results much sooner. But, unfortunately, some branches refuse to be classified, and so we learn them only through experience.

It requires a great deal of will power on the part of the teacher to induce deaf children to enter into the processes of arithmetic thoroughly, but if a great deal of time is spent at first, and the processes are entirely understood through action and practical examples, a good foundation is laid.

However, in the later development of arithmetic the children need to be able to do problems without this formal statement as well as with it, else they become mechanical. The sooner children see the relation between arithmetic in school and practical life the better. It would be absurd for a child to be so dependent on a method that he could not count his change when buying things unless he had the process stated on paper. However, I find that the more thoroughly a child has learned any set form the more flexible is his use of other forms similar to it. So the child who states the formal problem most readily is the first to do a problem stated informally.

We often hear it said that the teaching of arithmetic is a fine mental discipline. It reduces conglomerate thoughts to order and accuracy and forms habits of reasoning. If correlated with language teaching it doubles its efficiency. It leads to investigation and independence. What we must do is to present it in the form that will appeal most readily and most surely.

"Next to the principal, the most important man in a school system today is the janitor," said Dr. F. B. Dressler of the United States Education Bureau, in discussing the subject of health in the school-room.

A LEGEND FOR THE SPRING-TIME

BY ENFIELD JOINER

"I heard the wood-pecker peck,
And the sap-sucker sing,
And I leaned out my window,
And lo! it was Spring."

ONE of the earliest spring birds is the woodpecker. Did you ever hear the story of how it came to the earth? Whenever I hear a woodpecker "tapping the hollow oak tree," it preaches a sermon to me, because I think of this story.

One time an old woman lived in the country all alone. She was a very cross old woman; she asked no favors of anybody and always refused to do a favor for anybody else.

One cold afternoon in March an old man came to her door.

"Pray let me in, mistress," said he, "for I am both cold and hungry."

"Go away," answered the old woman, angrily; "I'll have no tramps about me."

"I will work for you, good mistress," replied the hungry man, "if you will only give me a little food.

Now the old woman had a great deal of wood behind her house, and she decided to let the old man cut it up for her stove. So she sent him around the house and he went to work. After he had worked for an hour or more he went back to the front door and asked for something to eat. The old woman was very stingy, and she did not want to give any of her supper away, so she ran out and tried to drive the old man off.

But as she did so she felt herself changing. She wore a black dress with a white apron, and she had a small red cap on her head. Her dress began to cling closely about her and she kept getting smaller and smaller. Presently she was as small as a bird, her black dress had become black feathers, her white apron was a white breast, and the red cap on her head was a small red top-knot. She soon felt herself getting lighter and lighter, and pretty soon she was flying through the air. She was hungry, too, so she stopped in the first tree and began to peck in the wood for food.

I think that the poor old man was really a fairy who comes now and then to this world to punish selfish people. Never again could the old woman go back to her cozy, warm home. All winter long she had to live in the woods with the other birds and to try to get her food from dying trees. The woodpeckers which we see today are her children, and they, too, all wear a white apron and a red cap as their mother did.

SPEECH-TEACHING IN AMERICAN SCHOOLS FOR THE DEAF

BY HARRIS TAYLOR, SUPERINTENDENT OF THE VOLTA BUREAU

THE *American Annals of the Deaf* for January, 1913, contains valuable statistical tables relative to pupils and teachers in American schools for the deaf on November 10, 1912.

From these tables we learn that during the year ending November 10, 1912, the number of schools increased from 148 to 154; the number of pupils increased from 12,588 to 13,193; the total number of teachers from 1,317 to 1,398; of articulation teachers from 962 to 1,013; of industrial teachers from 389 to 400.

During this period the total number of pupils increased from 12,588 to 13,193, or 605; the number taught speech, from 9,302 to 9,878, or 576; the number taught wholly or chiefly by the oral method, from 8,119 to 8,661, or 542; the number taught by a combination in which both oral and manual or silent methods were prominent, from 1,183 to 1,217, or 34; the number by manual methods, from 3,286 to 3,315, or 29.

The following tables relating to the growth of speech-teaching in the United States from 1893 to 1912, inclusive, are compiled from the *American Annals of the Deaf*, with percentages computed from them.

TABLE I—PROGRESS OF SPEECH-TEACHING IN AMERICA, AS REPORTED IN THE ANNALS

Year.	Total schools.	Total pupils.	Number of pupils taught speech.			Percentage of pupils taught speech.		
			A	B	C	A	B	C
1893	79	8,304	4,485	2,056	80	54.0	24.7	0.96
1894	82	8,825	4,802	2,260	109	54.4	25.6	1.24
1895	89	9,252	5,084	2,570	149	54.9	27.7	1.61
1896	89	9,554	5,243	2,752	166	54.9	28.8	1.74
1897	95	9,749	5,498	3,466	162	56.4	35.6	1.66
1898	101	10,139	5,817	3,672	116	57.4	36.2	1.14
1899	112	10,087	6,236	4,089	128	61.8	40.5	1.27
1900	115	10,608	6,687	4,538	108	63.0	42.8	1.02
1901	118	11,028	6,988	5,147	73	63.4	46.7	0.66
1902	123	10,952	7,017	4,888	63	64.1	44.6	0.58
1903	128	11,225	7,482	5,433	100	66.6	48.4	0.89
1904	133	11,316	7,601	5,508	154	67.2	48.7	1.36
1905	128	11,344	7,700	5,733	149	67.9	50.5	1.31
1906	132	11,648	7,846	5,645	152	67.4	48.5	1.31
1907	137	11,648	8,040	6,500	148	69.0	55.8	1.27
1908	141	11,990	8,299	6,760	143	69.2	56.4	1.19
1909	144	12,046	8,590	7,238	166	71.3	60.1	1.38
1910	145	12,332	8,868	7,562	134	71.9	61.3	1.09
1911	148	12,588	9,302	8,119	158	73.9	64.5	1.25
1912	154	13,193	9,878	8,661	179	74.9	65.6	1.35

A. Number taught speech.
B. Number taught wholly or chiefly by the Oral Method.
C. Number taught wholly or chiefly by the Auricular Method.

TABLE II—INSTRUCTORS OF THE DEAF

Year.	Total teachers.	Industrial teachers.	Not including industrial teachers.		
			Total teachers.	Articulation teachers.	
				Number.	Percentage.
1893	.....	...	765	331	43.3
1894	.....	...	784	372	47.4
1895	.....	...	835	397	47.5
1896	.....	...	879	427	48.6
1897	1,188	260	928	487	52.5
1898	1,253	304	949	530	55.8
1899	1,309	323	986	561	56.9
1900	1,353	343	1,010	588	58.2
1901	1,385	358	1,027	641	62.4
1902	1,388	349	1,039	664	63.9
1903	1,438	373	1,065	696	65.4
1904	1,453	328	1,125	734	65.2
1905	1,491	332	1,159	749	64.6
1906	1,525	351	1,174	765	65.2
1907	1,552	359	1,193	767	64.3
1908	1,648	394	1,254	836	66.6
1909	1,634	381	1,253	860	68.6
1910	1,673	370	1,303	896	68.8
1911	1,706	389	1,317	962	73.0
1912	1,798	400	1,398	1,013	72.46

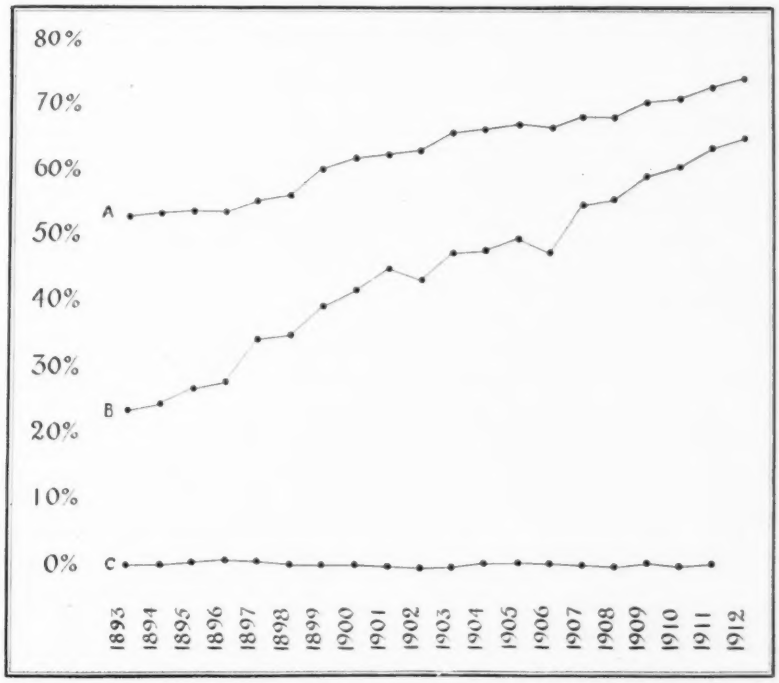


DIAGRAM ILLUSTRATING TABLE I

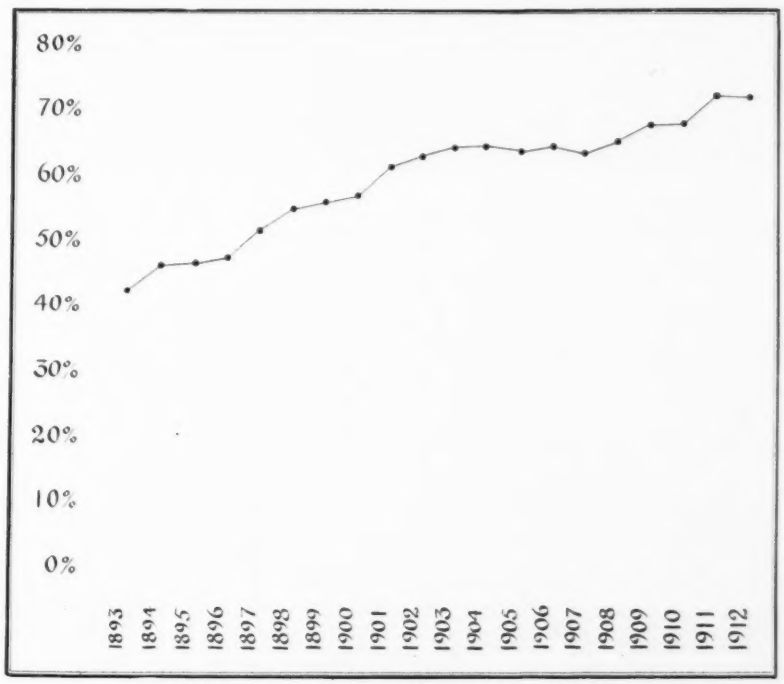


DIAGRAM ILLUSTRATING TABLE II

WORK AT THE KING SCHOOL, MARSOVAN, TURKEY

BY MISS GALENE PHILADELPHEUS

THE King School is the first oral school as well as the first Christian school started for the deaf in Turkey. It is a part of the American Board work, although for its support it depends entirely on special gifts for this purpose, as the Board has been unable as yet to make any grant to it. It was opened in the fall of 1910, with three pupils, a teacher, and a supervisor, no endowment, and even with a large part of the money needed for the first year of work only in prospect. Now, at the end of its second year, while we do not feel able to give a formal report, I will attempt to present to you a sketch of what has been accomplished and what the outlook is.

THE MARTHA A. KING MEMORIAL BUILDING, IN WHICH THE SCHOOL IS LOCATED

The school has a little nest of a home in one corner of the mission premises. This property has cost between eleven and twelve hundred dollars, including expenditures for repairs. This and all other immediate needs have been supplied through the earnest interest and effort of friends.

With the three Greek children received last year, the Greek department of the King School was opened. This year no new Greek pupils were received, but the Armenian department was started with six Armenians. The last half of the year a Turkish girl has been coming for two hours daily, chiefly for sewing and other handwork. This makes in all ten pupils, of whom eight are boarders.

The number of nationalities, and the fact that each nationality must be taught its own language, complicates the educational problem everywhere in Turkey; but it presents most serious difficulties in the teaching of the deaf. Although we are still in the experimental stage, you may be interested to know how we have treated this national problem.

In school work the Armenians and Greeks have been kept in their respective school-rooms, learning each their own language. Once a day the older Armenian and the Greek children had a lesson in arithmetic together. Each child spoke the numbers in his own language, as the teacher, fortunately, understood both. No more in the way of language was attempted in this lesson. Three times a

week I had these same children in Visible Speech. The whole class learned both the Armenian and the Greek sounds. Some time was spent in diagram study and drawing, and more on articulation exercises. Although the children knew that in their school-rooms they were being taught different names for the same objects, it was through their work together on sounds that they were thoroughly awakened to the language differences. Later a clearer idea of the distinction of languages was given them through comparison of words.

Outside of the school-room no attempt is made to keep the Armenians and Greeks separate. They live and eat and play together. Most of the older children know both alphabets and a number of words of one another's language. This confusion of tongues is not ideal, but it is true to life, for it is no more than Turkey in miniature. It is on the financial side that this problem presses heaviest, for should a Turkish department be added, to offer a meager five-years' course to each child, we should need to keep up at least fifteen classes, nor would it be possible to add intermediate grades or divide classes, as would often be necessary.

In the way of industrial training all the children learn sewing. They also have a good share in the general house work and care of the garden. The boys spend a number of hours each week in the cabinet shop, while the girls learn a little crocheting and other kinds of handwork. In view of the fact that when these children leave school they will have to depend on their manual skill for their living, we have encouraged self-expression in all forms of designing and constructive occupation. The results attained are only mediocre, but the decided improvement in control of hand and appreciation of form and color is encouraging.

There are no "plans" made yet for next year, for although we have heard of more than a dozen deaf children—Greek, Armenian, and Turkish—it is uncertain how many of these we shall be able to receive. It is not probable that there will be more than one beginning class. As to the present Greek pupils, it seems best not to attempt to do anything more for them. Their age, home conditions, and all other questions considered lead us to the conclusion that this is best. It is beyond our present ability and means to offer them what we feel they need, and to give them anything else will only unfit them for such a life as we see lies before them. The Armenian children, it is hoped, will all come back in the fall.

A PUPIL ON THE DAY OF HER ARRIVAL AT SCHOOL

A comparison of the appearance of this girl as she appears in the next illustration is good testimony as to the efficacy of the work.

How soon our hopes for the King School will be realized we cannot tell, but we trust the day is not far distant when we will have a strong manual training department, varied enough to meet the needs and fit the ability of all. Most probably many of the girls after leaving the school will go into domestic service, while the boys will work in shops, and some, we hope, will take up agriculture.

And now a word about sounds and articulation. After the experiences of

TYPICAL KING SCHOOL PUPILS

teaching the deaf one year in English (in America), a second year in Greek, and a third year in Armenian, I find my mouth and ears and mind stored with sound impressions and tactile sensations. I confess that there is some confusion and chaos out of which order has not yet proceeded. A comparative study, however, of these languages, as far as it goes, may be of interest to you. I present this study as mostly theory rather than result of experience.

I find that Greek, having only five vowel sounds and no diphthongs, supplies variety through vocal inflection. It is highly accented, through intensity of voice rather than length of vowel, as in the case in English. In Greek the vowels are ordinarily all of equal length. In the mouths of good speakers the accented syllable of the emphasized word is lengthened more or less, but that is controlled by the feeling, thought, and personality of the individual. An unfortunate inherent tendency is that of the vowels toward obscurity. There are no low vowels.

The consonants are as little obstructive to the general flow of the series of vowels as possible. Rather they seem to serve as links to the latter. A great part of the grammar is devoted to rules tending to smoothness and easy articulation. All this minimizes the tactual sensations accompanying speech, and makes Greek a difficult language to remember without the aid of hearing.

The Armenian language has seven vowels and several diphthongs. The vowels are all short, as in Greek. The speech is made rugged by harsh combinations of consonants and abrupt endings of words. It is a "mouth-filling" language, supplying abundance of tactual impressions.

The conjugation of verbs in Armenian is more difficult than in English, though not as elaborate as in Greek. In Armenian there are no genders, while in Greek, as in French, there is gender distinction for common as well as proper nouns, even the adjectives changing their endings according to the gender of the noun to which they refer.

On the whole, I find Greek elaborate, not supplying material for tactual memory, flowing smoothly, with no greater break than an occasional ripple. Armenian is simpler in its construction, less elaborate in its inflections, harsher in sound, and abrupt in articulation.

The accompanying tables will give you further comparison of these languages. These tables present the comparative

proportion of words, syllables, vowel sounds, and consonant sounds in English, Greek, and Armenian.

I. In this group three scripture passages were taken at random from the Old Testament, the Gospels, and Epistles.

II. In this group thirteen very short and common sentences, such as "Come here," "What do you want?" etc., were compared.

III. In this group some longer sentences, such as would commonly occur in conversation, were compared.

I.

	Number of words.	Number of syllables.
E	111	145
G	94	197
A	85	180

II.

E	46	49
G	43	79
A	34	61

III.

E	63	75
G	57	121
A	38	78

I.

	Number of vowel sounds.	Number of cons. sounds.
E	145	232
G	197	222
A	173	270

II.

E	49	84
G	79	82
A	57	76

III.

E	74	127
G	121	130
A	68	103

English, 122 vowel sounds, 201 consonant sounds, per 100 words.

Greek, 205 vowel sounds, 223 consonant sounds, per 100 words.

Armenian, 190 vowel sounds, 286 consonant sounds, per 100 words.

English, per 100 vowel sounds, 165 consonant sounds.

Greek, per 100 vowel sounds, 109 consonant sounds.

Armenian, per 100 vowel sounds, 151 consonant sounds.

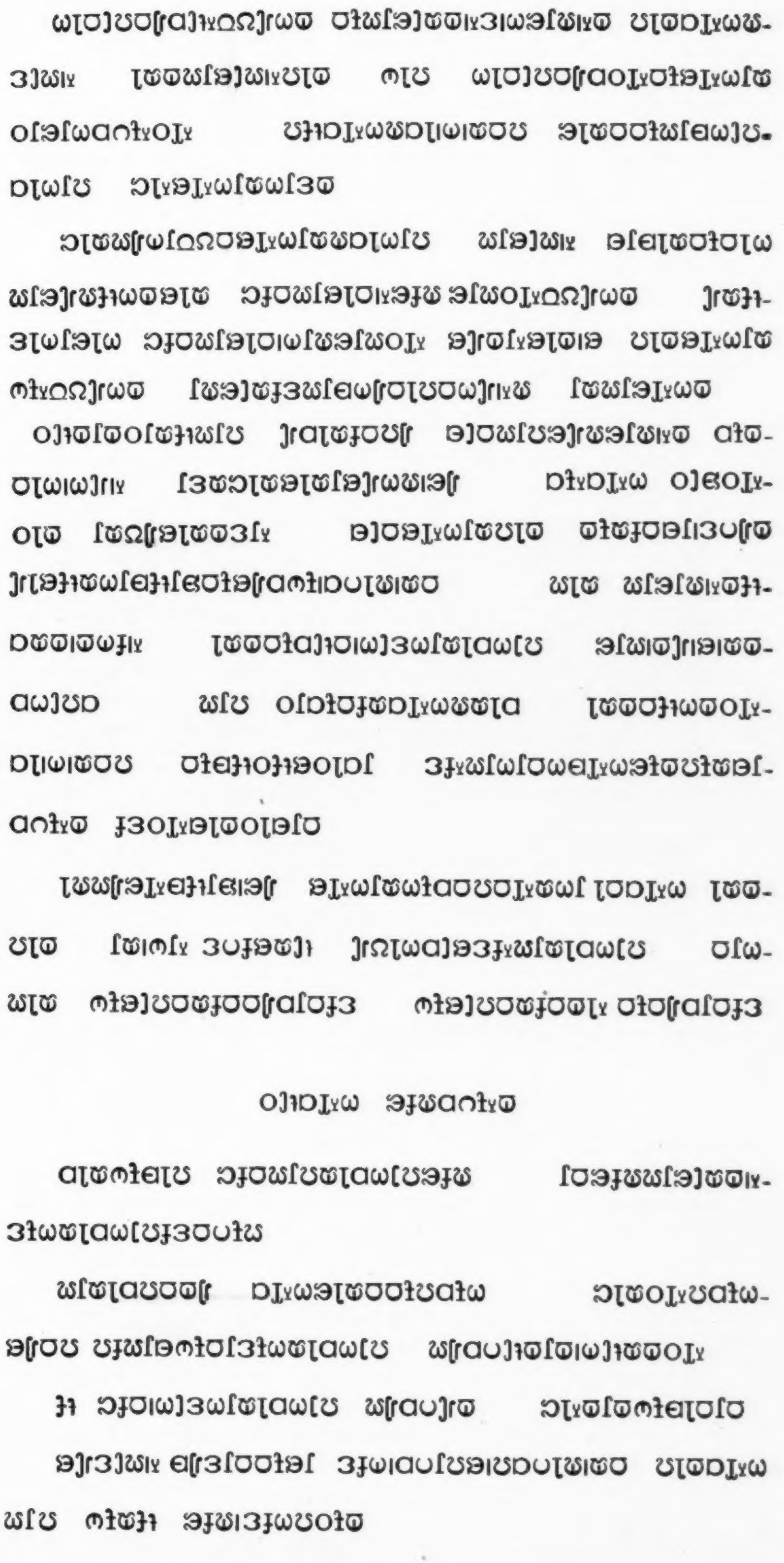
It will be noticed that in Armenian the number of syllables exceeds that of the vowel sounds. This never occurs in Greek and rarely in English.

The following is an interesting sentence taken from the third group: "When you are through with your work, let us go for a walk." In this sentence there are:

	Words.	Syllables.	Vowel sounds.	Cons. sounds.
E	13	13	13	21
G	9	22	22	23
A	5	14	9	22

COOKING CLASS FOR DEAF CHILDREN AT THE EAU CLAIRE, WISCONSIN, SCHOOL

PHONETICALLY WRITTEN STORIES IN THE MELVILLE BELL SYMBOLS



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PHOTOGRAPHS OF HUMAN AFFAIRS

PICTURES WITH A STORY IN THEM

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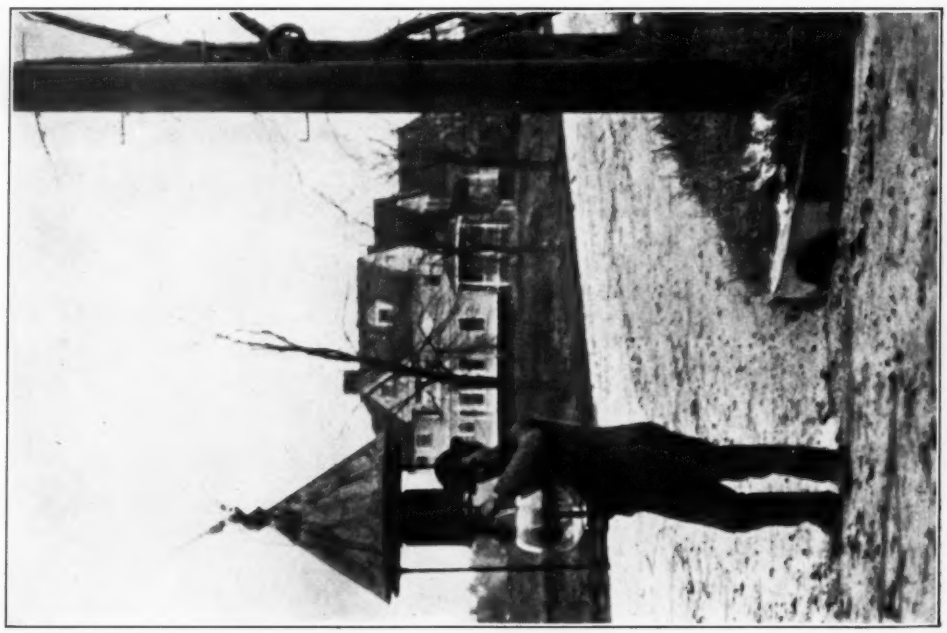

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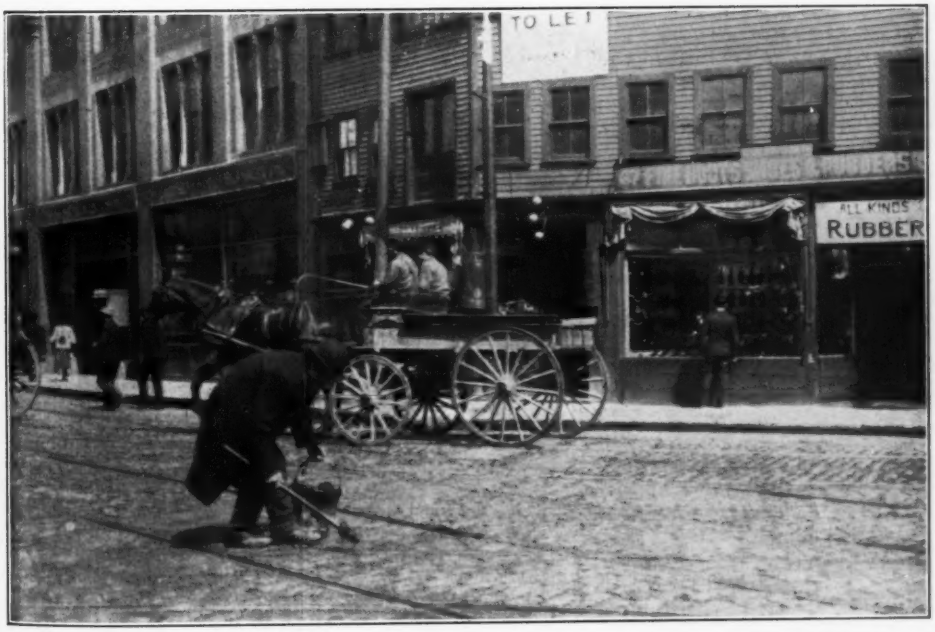

84

POINTERS FOR PARENTS OF LITTLE DEAF CHILDREN

PARENTS and others desiring suggestions on how to properly train and care for little deaf children, how best to have them taught at home or elsewhere, and to perceive what the experiences of other mothers have been in the teaching and training of deaf children, will find thought-awakening material in the following listed articles that have appeared in the VOLTA REVIEW or the Association Review. If you are not a member, join the Association by sending $2, which covers entire annual cost of membership and entitles you to receive the VOLTA REVIEW for one year. A number of similar articles have appeared in the present volume of the VOLTA REVIEW, which are not listed here. Copies of the magazines referred to in the list may be obtained from the Volta Bureau until the limited supply is exhausted.

1. Suggestions to Mothers of Little Deaf Children. By Mrs. Sidney M. Moore. Tells how to teach speech to the baby or the child, what to observe, how to develop self-reliance, obedience, how to avoid the acquirement of disagreeable peculiarities, etc. 6 pages. Volta Review, April, 1912. Vol. 14, No. 1.

2. The Case of Shy Robert. By Mrs. J. Scott Anderson. Presenting some difficulties encountered in winning a 10-year old deaf boy's respect and developing his intellectuality. Advising parents that just a little deafness may be the cause of backwardness in children. 2 pages. Volta Review, April, 1912. Vol. 14, No. 1.

3. Experiences of a Deaf Mother. By Hypatia Boyd Reed. Details how a *deaf* mother cared for her hearing babies. 8 pages. Volta Review, March, 1912. Vol. 13, No. 10.

4. The Deaf Child in the Family. By P. Roorda. How parents may train a deaf child to good habits and to a knowledge of his mother-tongue before the age at which he enters school. 5 pages. Volta Review, March, 1912. Vol. 13, No. 10.

5. The Noblesse Oblige of the Teacher. By Christine M. Mauzy. Calling attention to the sacred obligations resting on those entrusted with the care of deaf children. 1¼ pages. Volta Review, January, 1912. Vol. 13, No. 8.

6. Richard at School. By Mrs. J. Scott Anderson. How a little deaf boy realized that he had a voice, and some of the things he learned. 5 pages, 4 illustrations. Volta Review, February, 1912. Vol. 13, No. 9.

7. When Richard Came to Us. By Mrs. J. Scott Anderson. Why "the little deaf child must be treated just the same as the little hearing child." 1½ pages. Volta Review, January, 1912. Vol. 13, No. 8.

8. Physiology and Psychology of the Deaf Child. By Charles D. Lowry. Holds that work and play for the deaf child "must be scientifically planned and systematically carried out" to insure normal mental and physical growth, and avoid inferiority. 5½ pages. Volta Review, December, 1911. Vol. 13, No. 7.

9. The Classification of Deaf Children. By MacLeod Yearsley, M. D. To be efficient, education must make the study of the individual deaf child its first consideration, with the view to adapting to each child the system best suited to his needs and calculated to develop his faculties to the best advantage. 2 pages. Volta Review, November, 1911. Vol. 13, No. 6.

10. The Intelligence of the Deaf Child. By A. J. Story. Considering the conditions necessary to develop intellectual growth in the deaf child. 3 pages. Volta Review, November, 1911. Vol. 13, No. 6.

11. The Medico-Educational Problem of the Deaf Child. By G. Hudson-Makuen. "Many children have perforce joined the ranks of deaf-mutes who might have acquired speech in the normal manner if the preventive or curative measures herein suggested had been adopted during early infancy." 4 pages. Volta Review, September, 1911. Vol. 13, No. 4.

12. The Deaf Child's Proper School Age. By Macleod Yearsley, M. D. A plea for commencing his education at three; the cultivation of hereditary speech-tendencies, for "not only is there an hereditary tendency to speak, but also an hereditary tendency to develop the general faculties through and by speech," etc. 5 pages. Volta Review, February, 1911. Vol. 12, No. 11.

13. Some Principles of Teaching. By Angeline B. Fullington. Applied psychology in teaching the deaf; the factors of inheritance, experience, habit, and memory; their nature, and how a basic understanding of them makes for higher child-culture. 3 pages. Volta Review, January, 1911. Vol. 12, No. 10.

14. What Home Training is to the Deaf Baby. By Mrs. J. Scott Anderson. "Parenthood does not bring forth an instinct sufficient in itself for the present day education of a normal child." 2½ pages. Volta Review, October, 1910. Vol. 12, No. 7.

15. Pessimism of Parents and Teachers. By S. G. Davidson. Its effect upon the deaf child. The lack of encouragement has, doubtless, meant failure in life to many a deaf boy. 3½ pages. Volta Review, September, 1910. Vol. 12, No. 6.

16. The Development of Speech in the Deaf Child. By A. L. E. Crouter. Considering where and when and how he should be taught to speak; and holding that "the deaf-mute, habituated to the use of signs, is condemned to a life of feeling upon a mental plane far below that of a mind disciplined by the use of words." 9 pages. Volta Review, August, 1910. Vol. 12, No. 5.

17. How My Children were Educated. By Lucy M. Sanders. Telling how she educated her two daughters, who gradually became deaf; and pointing out practices that tend to check spontaneous expression. 5 pages. Association Review, December, 1909. Vol. 11, No. 5.

18. Jane and the Symbols; a Case of Speech-hesitation. By Mary S. Breckinridge. Telling how a five-year old child quickly grasped the principles of visible speech, "affording marked improvement in nerve force and in concentration of attention." 1½ pages. Association Review, December, 1909. Vol. 11, No. 5.

19. Story Work. By Martha C. Bell. Showing how to use the story for the two-fold purpose of feeding the child's interest and teaching him correct English; and holding that deaf children enjoy good poetry" and have a keen relish for the steady beat of a syllable upon a syllable, and for poetic expression." 6 pages. Association Review, October, 1909. Vol. 11, No. 4.

20. Social Training that Makes for Efficiency. By Mrs. Marion Foster Washburne. Holding that efficiency is dependent on the power of communication; that a deaf child not taught speech is "cut off from the stores of the highest wisdom of antiquity, from the most delicate shades of meaning in poetry, from the subtlest, and also the most powerful movements of the human soul." 7 pages. Association Review, October, 1909. Vol. 11, No. 4.

21. The Beginnings of Language and Reading. By Ruchiel Mirrieless. Apparent wilfulness and diffidence on the part of the deaf child "is the result of misunderstanding and inability to express himself"; therefore "give him the language to express his needs, to tell of his interests and experiences," etc. 3 pages. Association Review, October, 1909. Vol. 11, No. 4.

22. Reading in Intermediate Grades. By Frances W. Gawith. "The child who reads has a great advantage in use of language over his brother who has not acquired the habit. . . . The difficulties for the little (deaf) child in our schools are far greater than for his hearing brother. His smaller vocabulary, his lack of much idiomatic language, his more meager development, form almost insurmountable obstacles in his way." 5½ pages. Association Review, October, 1909. Vol. 11, No. 4.

23. A Mother's Letter. By Mrs. Lucile M. Moore. Pleading for "the education of the parents of deaf children. In almost every home that shelters a little deaf child blunders are being made that will retard his development and hinder a teacher's efforts during many years—blunders that a little timely advice might prevent." What to advise mothers about. 1½ pages. Association Review, October, 1909. Vol. 11, No. 4.

24. Correction Work in Speech. By Caroline L. Olin. "Natural breathing is closely allied to the matter of correct articulation; therefore teach natural breathing. . . . Breathy speech is not only untelligible, but wastes the energy of the child. . . . Nervousness invariably causes tension of the muscles of the throat and mouth; therefore a child should be allowed to speak with as much freedom as possible to avoid this constriction." 2 pages. Association Review, October, 1909. Vol. 11, No. 4.

25. How a Mother Educated Her Own Deaf Child. By Mrs. E. A. Wise. "One morning we got as far as mo-ther. She called it out loudly and I jumped up and kissed her. She liked that game, and for the rest of the day whenever she called 'mother' I came; so she began to feel that it was my *name*, and then suddenly the light dawned. After this it was difficult to keep pace with her increasing desire for knowledge. We named our family and friends, then room by room, all the articles of daily use. . . . I soon found that there must be no hurry. Whatever she wanted explained must be dwelt upon patiently until it was clear, so that we might build upon a good foundation." 5 pages. Association Review, April, 1909. Vol. 11, No. 2.

26. Laddie. By Anna C. Reinhardt. Relating the remarkable success attained in "teaching a deaf-born boy, whose speech-training began when he was two years old." 4½ pages. Association Review, June, 1908. Vol. 10, No. 3.

27. What Has Been Done With One Deaf Child in His Own Home. By Anna C. Reinhardt. Born deaf, Laddie's speech-training began at the age of two. 3 pages. Association Review, February, 1906. Vol. 8, No. 1.

28. Helps and Hindrances of Deaf Children in Acquiring Speech and Language at the Natural Age. By Mary S. Garrett. "The deaf baby cries and babbles just as the hearing baby; but once let its relatives discover that it is undisturbed by noises and therefore deaf, they stop the endless repetition of language which they address to the hearing baby when it begins to babble, and to which, impelled by its hereditary tendency to talk, its impulse to imitate, and its budding power to acquire language, it gradually and naturally responds. The deaf baby has all these impulses, and its lack of hearing is compensated by the ability to acquire language and speech through sight if and only if its attention is always and invariably directed to the mouth of the speaker,

and not distracted by efforts to convey indefinite ideas by the clumsy motions of the hand. It will then become the habit of its life." 3 pages. Association Review, June, 1908. Vol. 10, No. 3.

29. Sunday Occupations for Younger Pupils. By Bessie N. Leonard. Briefly outlining various sorts of hand work which may be used on Sunday with the youngest pupils, with a view of developing the mind through the training of the hand, using materials kept apart for this one day in seven. "The cultivation of the powers of observation, imitation, and of originality is one of the objects to be kept constantly in mind when planning this work." 5 pages. Association Review, February, 1907. Vol. 9, No. 1.

30. How Best to Secure Intelligent Speech for Deaf Children. By Mary McCowen. "Now the defect of the deaf child is wholly of physical origin, and although the result of this defect is many times more serious than were it a missing limb or a crooked back, it does not interfere with the fact that all the functions of both his body and his mind are subject to the same laws that control the growth and development of the hearing child. We find that he does laugh when he is amused, cries when he is hurt, investigates by pulling to pieces whatever is within his reach, learns to perform all the physiological coördinations by repeated attempts when he has reached the proper physical development and is confronted by a sufficiently strong motive for action, and our aim in giving him an education, and especially in giving him language and speech as a basis for education, should be as nearly as possible to work along nature's own laws." 6 pages. Association Review, February, 1907. Vol. 9, No. 1.

31. The Importance of Physical Training for the Deaf. By Grace G. Green. Pointing out the different exercises that deaf children require more than hearing children, not only because to a large extent the deaf are lacking in the power of coördination, but by reason of their weakened physical condition, due to previous environment, etc. 8 pages. Association Review, February, 1907. Vol. 9, No. 1.

32. The Efficiency of the Day School. By Frances Wettstein. Outlining the natural and the psychological laws that underlie the principles that make for the success of the day school for deaf children, and of its value to parents desiring to retain their deaf child at home. 6 pages. Association Review, April, 1906. Vol. 8, No. 2.

33. The Duty of Parents to Their Deaf Children. By S. G. Davidson. "However skillful and devoted teachers may be, they cannot take the place of those related to their pupils by ties of blood, nor do the work that finds its inspiration and power in the natural affections. Love is the greatest educator, and it can be expressed in no way that will be so much appreciated by, or do so much good to, a deaf member of the family, whether child or adult, as in the daily courtesy and thoughtfulness that take account of his infirmity only to help him forget it." 3 pages. Association Review, April, 1906. Vol. 8, No. 2.

34. The Home Instruction of a Little Deaf Child. By Stella K. White. The record kept by a mother showing the progress made by a deaf-born girl whose tuition commenced at the age of three at home, and later was continued at school. 10 pages. Association Review, December, 1901. Vol. 3, No. 5.

35. A Little Day School Pupil. By Anna M. Block. Concerning a four-year probably deaf-born boy, who was taught speech and speech-reading, repeating "Now I lay me down to sleep" at the end of four months' instruction, etc. 6 pages. Association Review, October, 1900. Vol. 2, No. 4.